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ABSTRACT

This computer program, a mechanization of the handsorted techniques which geographical dialectology has been using, increases the number of hypotheses that can be explored and the various correlations that can be made. It can draw several of the kinds of maps that dialectologists have used in direct atlases. The hardware, software, and program design of the interactive program are described. Several conversations held with the computer and the maps of scattergrams and isoglosses thus produced are reported. These are based on Harold Allen's Linguistic Atlas of the Upper Midwest. One branch of the program sorts the responses in a variety of ways and calculates the percentages of informants who have given certain responses to certain questionnaire items. Printouts of the program itself and some of the results include: (1) data files of the responses given by informants and information on each informant, (2) a map of the dialects of North and South Dakota, and (3) maps of the several isoglosses and scattergrams drawn by the program. (PMJ)

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"Interactive Computer Programs for Sorting and Mapping Dialect Data"

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(This is a revision of a paper read on August 8, 1978, at the Third International Conference on Methods in Dialectology, held at the University of Western Ontario, London, Ontario. The page numbers referred to in the text are the pages of the original handout.)

One summer several years ago, I was talking with Glenn Gilbert about the work that he had done in order to produce his dialect atlas of Texas German. I was spending that summer working with a computer; and, when I mentioned to him how quickly computers could sort data, he said enthusiastically how much easier his work would have been if he had had a computer to help him sort his data. I had never worked on an actual dialect atlas, but a course which I had taken from Raven McDavid had shown me what the techniques were. So I spent the rest of the summer trying to teach the computer how to draw dialect maps. Two years later, at another university and on another computer, I finally completed a fairly good program. One of my colleagues there was a former student of Harold Allen's, and at her suggestion I wrote to him to ask whether he would be interested in using it. He replied that his sorting work for the Upper Midwest atlas was already finished, but that he wished he had had such a program ten years earlier. So I put the program back on the shelf until I received the call for papers for this conference. Then I got the program out, revised it, and rewrote it for yet another computer.

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I must say, right away, that this is purely a paper on methodology; there is no original data in it. All of the material that I am going to show you has been taken from Allen's Linguistic Atlas of the Upper Midwest. That atlas was simply the most systematic presentation of large amounts of dialect data that I could lay my hands on, and my use of Allen's data will have to be my thanks for the encouraging comments that he made about my program several years ago. What I am describing here is a computer program that can draw several of the kinds of maps that dialectologists have used in dialect atlases. The only difference between these maps and theirs is that this program draws its maps very much more rapidly than maps can be drawn by traditional, hand-sorting methods. My friends who have actually worked on preparing dialect atlases tell me that they have often suspected that certain items of their data would show interesting correlations, but they have not investigated those possible correlations simply because they have not had the time to go through the data once again to make a map of the things which they would like to compare.

This is exactly the kind of situation in which computers can be helpful. Computers are extremely stupid, but they are extremely fast. If a person is careful to tell a computer exactly what he wants it to do, the computer will perform any calculation or any sorting job in a small fraction of the time which the same calculation or sorting job would require if done by hand. For example, the shortest of the computer runs that I am going to show you took four minutes to complete; it did not draw a map, which helped shorten the time it took, because the actual map-drawing process that I used was rather slow. The longest of the runs that I am going to show you drew a map of a participation zone based on four questionnaire items; it took 18 minutes to complete. The exact amount of time needed for any run will, of course, depend on the equipment and on the amount of dialect data being used.

The things which are necessary for a program such as this can be divided into two parts: the hardware and the software. The hardware which I used included an IBM 360/50, which is a medium-large, general-purpose computer that is not especially well adapted for running interactive programs such as this one. I also used a

typewriter-keyboard-and-TV-screen input/output device for communicating with the program; I typed my instructions onto its keyboard, and the computer wrote those instructions onto its screen, along with messages which the program generated. I also used a plotter, which is a machine with a pen and some paper that draws lines by moving the pen and the paper relatively to each other. There was also a line printer and a NOVA minicomputer which controlled the plotter and the line printer. The maps that I am showing you here are a bit ragged-looking, because they were drawn on the rather cheap, digital-incremental plotter that my university has available for general use. This plotter has a minimum pen movement of 5/1000 of an inch, and when the pen moves to and fro it doesn't always come back exactly to the place it left from. Anyone using a program like this to prepare maps for publication should use a high-quality, flat-bed plotter; machines of that kind can draw maps equal to the best product of a cartography laboratory.

The software which I used included the program itself and the magnetically-recorded files which contained the dialect data. One of the principal features of this program is that it is an interactive program, rather than a batch program. For a batch program, all of the instructions and all of the data must be loaded into the computer at the beginning of the program's run, and the computer then works on the given data according to the given instructions until it reaches the end of the program. After a person has loaded a batch program into a computer, he has no further control over it. However, while an interactive program is running, it can reach a point at which it writes out a message to the person using it and then waits for its user to give it some more information. After the user has typed that information onto its keyboard, the program starts running again, using the additional information which its user has given it. An interactive program can therefore take some data, partially sort it, tell its user what it has found up to that point, ask him what it should do with the results, wait until he has told it what to do, and then go on to process the same data further according to his additional instructions.

The data files used for this program are illustrated on pages 1 through 4 of the handout. Page 1 shows how the informants'

responses to the questionnaire are arranged in the computer's data file. This is actually a file with four columns, but it has been doubled onto the page for economy's sake. In the first row of this file, the zeroes in the first column mean that this row is the beginning of the responses given to the questionnaire item named in the third column. (The second and fourth columns in this row are never used by the program.) Each of the following rows has one response that was given to this questionnaire item. For each of these rows, the first column has the informant's serial number from the atlas; the second column has zero if the row contains the informant's first or only response, and it has a higher number if it contains an additional response by the same informant; the third column represents the letters and symbols which Allen used for reporting the informants' reactions to their own responses (this column is blank if he reported no such reaction); the fourth column gives the informant's response. Page 2 shows the rest of the data for this questionnaire item. Just below the center on the right-hand side is the end of this questionnaire item and the beginning of item number 1410.

For comparison, Allen's listing of the same data is given on page 3. Page 3 also has the beginning of the separate data file which contains personal information about the informants. In this file, the first column has the informant's serial number from the atlas, the second column has his or her type (I, II, or III), and the third column has his or her sex (M or F). Page 4 has the rest of this file of personal information.

Now I want to give you examples of some conversations which I had with my program, and I want to show you the maps which those conversations produced. In each of these conversations, the program gave me some information and asked me a question, I typed in a reply, the program gave me some more information and asked me another question, I typed in another reply, and so on until the program came to its end and drew a map or printed a table of percentages. On these pages, all of the things which I typed in have been marked with arrows; the rest of the writing was done by the program.

For the conversation on pages 5 and 6, I began by typing in two commands which told the computer to run my program. (The first

of these commands has to be typed in only once for each session with the computer; the second of these commands has to be typed in for each run of the program, although it is not shown in the other examples in the handout.) After about 15 seconds, the machine wrote out the heading and asked me what I wanted to do. I wanted to draw a scattergram, so I typed in "S". The program then asked me which questionnaire item I wanted, and I typed in the number of the item I had chosen. The program then gave me three opportunities to limit the data that I would use. I typed in "A" as my reply to the first question; if I had typed in "R", the program, when reading the data file with the informants' responses, would have skipped all the responses that did not have the third column entirely blank. I typed in "N" as my replies to both of the other questions; if I had typed in "Y" as my reply to either of them, the program would have asked me which type of informant or which sex of informant I wanted to choose. (I should mention that, for these yes/no replies, the program actually reads the first letter of whatever reply is typed in. It would respond to "YES" just as it responds to "Y", and it would respond to "NO" just as it responds to "N".)

All of these questions and answers were written out and typed in as fact as mechanically possible. Then, the screen of the input/output device remained unchanging for almost a minute. During that time, the program looked through the file of responses to the chosen questionnaire item, copied all the responses for that item onto a separate working file, compared all the responses given for that item, found out what types of responses were given and how many there were of each type, and alphabetized those types. It then wrote out the list which you see, and it immediately wrote out the instructions which follow.

The program then waited for me to decide how I wanted to represent this infomation on a map. The program has 25 available symbols--five geometrical shapes, each of which may occur by itself or with one of four additional lines drawn through it. I decided that I wanted a different symbol for each type of response, and I chose a convenient mnemonic system of symbols for them. The program had already asked me what symbol I wanted for "cattle range", which

is alphabetically the first type of response given for this questionnaire item. I typed in "H1", and it immediately asked me what symbol I wanted for "commons". I typed in "C", and the program and I continued this questioning and answering until I had typed in a symbol for each type of response.

The program then read through the working file of responses. It matched each response with its type, and it found the symbol for that type of response. It then identified the location of the informant who gave that response, and it wrote a number representing that symbol into the list for that location. When the program had finished identifying all the responses, it sorted the symbols for each location into order, and it gave instructions to the plotter, telling it the coordinates at which it should draw lines so as to produce the symbols on the map. All this took the better part of one minute, and the program then wrote out the message that it had finished the scattergram.

The program then asked me whether I wanted any special lines drawn onto the map. The information for drawing these lines is built into the computer program. Some of these lines may be political boundaries or other lines that are useful for background or reference; others may be geographical or historical features which the user may want to draw onto his map, just to see whether they correlate with the distribution of the dialect data. I wanted to draw at least one of these lines, so I typed in "Y" as my reply to this question. The program then asked me about each of the three special lines which it had available. I typed in "Y" as my reply when it asked me whether I wanted state boundaries, and I typed in "N" as my reply when it asked me about each of the other two possible lines.

The program then asked me whether I wanted place names written onto the map, and I replied that I did. This slowed down the eventual drawing of the map, because the plotter which I used takes more than two minutes to write in all the place names. Finally, the program gave the map an identification number. Any large computer normally has an internal clock that can be tapped for purposes like this. The program took the year, month, day, hour, and minute from this internal clock, and it wrote them out here and also told the plotter to draw them onto the map.

This completed one run of my program. In the computation center where I prepared these maps, I then walked across the room to the plotter, made sure that its pen was located in the correct place above its paper, and pushed some buttons on the minicomputer's control panel. The plotter then drew the map which is shown on page 7, and the line printer printed out the record of my conversation with the program. The total elapsed time was eight minutes, including nearly two minutes while I was choosing the symbols to represent the various types of responses. In order to know what the symbols on the map represent, one must of course consult the printed record of the conversation; but each map can be accurately matched up with the conversation which produced it, because the same number has been written at the bottom of both the printed record and the map.

Now let me show you examples of some more scattergrams produced by other runs of the same program. The conversation shown on page 8 is the same as the preceding one, except that I chose to reject annotated responses, I chose to draw a line representing the frontier of settlement in the year 1890, and I chose not to write place names. The resulting map, which is shown on page 9, therefore has fewer symbols and no names on it. You will see that, if the frontier had happened to match up with any significant distribution of the informants' responses, the correlation between them would have been readily apparent.

For the next conversation, shown on page 10, I selected the same questionnaire item, but I replied "Y" when the program asked me whether I wanted to limit informants to only one type. The program therefore asked me which type of informant I wanted, and I typed in "I" as my reply. When the program was reading the data file with the informants' responses, it therefore checked each informant's entry in the personal data file and skipped all the responses given by informants of other types. In this conversation, I also chose to draw the special line representing the Missouri River, and the resulting map is shown on page 11.

During the conversation shown on page 12, I again selected questionnaire item 1310, but I chose to include only responses given by female informants, and I replied "N" when the program

asked me whether I wanted any special lines drawn. The resulting scattergram is shown on page 13.

The conversation on pages 14 and 15 has a longer list of types of responses, but--like the preceding conversations--it has each type represented by a distinct symbol. I selected questionnaire item 2430 for this conversation, and I typed in a different reply each time the program asked me to choose a symbol for a type of response. I also chose to draw state boundaries and write place names. The resulting map is shown on page 16.

Pages 17 and 18 have another conversation in which each type of response is represented by a distinct symbol. In this conversation, I chose questionnaire item 4420, and I chose to draw state boundaries but not to write place names. The resulting map is shown on page 19.

All of these scattergrams have shown all of the responses to their respective questionnaire items, and they have shown each kind of response by a different symbol. However, this program can also draw other kinds of scattergrams. In order to investigate the distribution of dialect data, the user of this program may choose to omit certain types of responses from the scattergram, or he may choose to combine several types by using the same symbol for them.

For the conversation shown on pages 20 and 21, I wanted to investigate the distribution of three groups of terms for a certain kind of owl. I ran the program, and told it that I wanted a scattergram for questionnaire item 4570. But when it asked me for symbols for the types of responses, I specified symbols only for those types that I was interested in. The first type of response in the alphabetized list was "artic owl", and I typed in "H1" as its symbol, in order to produce a snowflake with one kind of line drawn through it. The second type of response on the list was "barn owl", which I was not interested in; I therefore typed in no symbol for it (the computer assumed that I had typed in a blank line), and it is not represented on the map. For "snow owl" I typed in "H3", in order to show produce another kind of snowflake and show its semantic similarity to "artic owl". For "ground owl" I typed in "D". For "prairie owl" and "prairie dog owl" I typed in "T2" and "T1", so that they would be represented by the same

geometrical shape but would be distinguished by the line drawn through that shape. For all the other types of responses I typed in no symbol. The resulting map, shown on page 22, is a specialized scattergram that shows only the types of responses that I wanted to investigate.

The conversation on pages 23 and 24 shows how types of responses may be combined when they are represented on a scattergram. This is a repetition of a conversation that I showed you earlier, except that in this conversation I specified no symbol for "commons" and I specified the same symbol--a triangle--for all of the responses that included the word "range". The resulting map, shown on page 25, clearly distinguishes the squares for "pasture" and the triangles for "range" and its varieties, with a few diamonds for "grazing land" scattered among the other symbols.

So much for scattergrams.

Another branch of this program draws isoglosses. This part of the program has, built into it, a basic network of possible isoglosses which separate each informant location from all of its neighboring locations. Page 26 shows a test pattern for this grid, in which each possible isogloss is represented by a bundle of five lines.

The conversation on pages 27 and 28 produced the simplest kind of isogloss map which this program can draw. In this conversation, I typed in "I" as my reply to the program's first question; when it asked me what questionnaire items I wanted, I typed in the number "1310" and then typed in a zero to show that 1310 was the only questionnaire item that I wanted to use. I typed in "A", "N", and "N" as replies to the program's next three questions, thereby placing no restrictions on the responses which the program would work with. Just as it did for the scattergram, the program wrote out a list of all the types of responses that were given for this questionnaire item. The program then asked me, for each type of response, whether that type was to be inside or outside the isogloss. My replies placed "range" inside the isogloss and placed all the other types of responses outside the isogloss. The program therefore drew the map shown on page 29, which has an isogloss that encloses all of the locations at which any informant

gave "range" as a response to questionnaire item 1310.

There is, however, one problem with the map shown on page 29. Unless the person using the program already knows, at least roughly, where the chosen type of response is used, he does not know which side of the isogloss is which. Another branch of the program, which will produce another kind of map, is therefore available.

Except for its omission of the state boundaries and the place names, the conversation on pages 30 and 31 differs from the previous conversation in only two ways: I replied "C" instead of "I" to the program's first question, and the program let me choose only one questionnaire item. However, these two differences produced a great difference in the resulting map, which is shown on page 32. This map clearly states the locations where any informant gave any response that is inside the isogloss, and also states where the informants gave only responses that are outside it.

The conversation on pages 33 and 34 draws the same kind of map, although it differs from the previous conversation in two small ways. For its questionnaire item, I decided that the response "cedar coulee", as well as the response "coulee", should be inside the isogloss; the map on page 35 therefore has "IN" written at every location at which any informant gave either of these responses. Also, this map has two peripheral locations at which the informant or informants gave no response to this questionnaire item; those locations are marked with the word "NONE".

The conversation on page 36 illustrates more dramatically these two features of the previous run of the program. I decided that I would draw an isogloss around all those responses to questionnaire item 6381 which included the morpheme "park". I therefore replied "O" when the program asked me about "berm" and "boulevard", and I replied "I" when it asked me about "parking", "parking strip", and "parkway". However, the resulting map, on page 37, shows that there were many locations at which no informant gave any response for this questionnaire item. The isogloss was therefore drawn only between locations where informants gave responses that were definitely inside or definitely outside the isogloss. The locations marked "NONE" form a sort of no-man's-land between the area inside the isogloss and the area outside it.

The conversation on pages 38 and 39 produced a map with an isogloss, "IN" and "OUT" labels, state boundaries, and place names. To produce it, I replied "C" to the program's first question, and I told it that I wanted questionnaire item 4570. When the program asked me which types of responses would be inside the isogloss, I replied "I" only for "ground owl". In the later part of the conversation, I chose to draw the state boundaries as reference lines, and I chose to write the names of the locations. The result, shown on page 40, is a map such as might be prepared for inclusion in an atlas, although it is a map more complicated than a person would produce if he were simply investigating the possible distribution of some dialect feature.

In addition to maps with single isoglosses, this program can also draw multiple isoglosses, which may combine into isogloss bundles. An example of a conversation which draws multiple isoglosses is shown on pages 41 through 44. For this conversation, I replied "I" to the program's first question, and I then typed in the numbers of the four questionnaire items that I wanted to use. The program asked me the usual three questions about limiting responses and informants, and it then asked me separately about each questionnaire item and the isogloss that I wanted to draw for it. For each item, the program wrote out an alphabetized list of the types of responses, and the program asked me whether each type was to be put inside or outside the isogloss. In making my choices, I tried to put characteristically Midland terms inside the isoglosses. The resulting map, shown on page 45, has a traditional sort of network of isoglosses and isogloss bundles. This map seems to show a major dialect boundary to the west and south of Bismark and Westfield and another major dialect boundary between Lead and Rapid City. Like the map on page 29, it fails to show which sides of the isoglosses the chosen terms are on.

The same data can be represented in another way, which may be more useful. For the conversation on pages 46 through 49, I replied "Z" to the program's first question, thereby choosing to draw a participation zone, and I specified the same four questionnaire items as I had specified for the preceding conversation. (I owe the term "participation zone" to Hankey's work on Colorado

dialects.) As it did in the preceding run, the program wrote out an alphabetized list of types of responses for each questionnaire item, and it asked me about each type. This time, the program asked me whether the type of response was characteristic of the participation zone, but I replied "Y" in this conversation wherever I had replied "I" in the earlier one, and I replied "N" wherever I had replied "O" before. The real differences are in the calculations which the program made and in the resulting map, which is shown on page 50. Each location on this map has, written at it, a number that represents the quantity of questionnaire items for which characteristic responses were given by the informants at that location. The isoglosses on this map are drawn between the locations according to the differences in the numbers which are written at them. Some of the isogloss bundles on the preceding map appear on this map also, but some of them have disappeared. There is still a major isogloss bundle between Lead and Rapid City. However, the bundle that was west and south of Bismark and Westfield has nearly disappeared. It may have been there because the informants near there used similar total numbers of Midland terms, but used different terms at different locations.

So much for isoglosses.

Another branch of the program calculates the percentages of informants who have given certain responses to certain questionnaire items, and it may also be used for showing how those percentages are distributed geographically. The map that I have used for scattergrams and isoglosses includes only North and South Dakota, because those two states can be put onto a map having a convenient shape and scale. However, the map that I have used for percentages includes all five states of the Upper Midwest, in order better to show how percentages can vary across a geographical region.

Pages 51 and 52 show a conversation in which I replied "P" to the program's first question, thereby choosing to draw percentages. The program immediately asked me whether I wanted to draw a map; essentially, it asked me whether I wanted to calculate percentages for each state separately or for the entire Upper Midwest as a whole. I replied that I wanted to draw a map, and I then gave it the number of the questionnaire item that I wanted to

study. I answered the three usual questions about limitations on responses and informants (for this run I chose to accept annotated responses), and the program wrote out the list of types of responses for the questionnaire item that I had chosen.

The program then asked me how many groups of responses I wanted. I decided that I wanted to find out what percentage of the informants had simply said "bucket", what percentage of them had simply said "pail", and what percentage of them had felt it necessary to mention that the object was made of wood; so I replied that I wanted three groups. The program then asked me about each type of response; for "bucket" I replied that it was to be put into group number 1, for "pail" I replied that it was to be put into group number 3, and for seven different types of response I replied that they were to be put into group number 2. The program then asked me whether I wanted to draw special lines or write place names, and I replied that I wanted names but no lines. (In this form of the program, the state boundaries are the only available special lines.) The program then drew the map shown on page 53, which shows the percentage of informants in each state who gave responses in each group, and which also gives the same kinds of percentages for the entire region.

The conversation on page 54 is the same as that on pages 51 and 52, except that I chose to reject annotated responses, and it produced the map on page 55. Almost all of the percentages on this map are less than the corresponding percentages on page 53, but the dramatic drop in the percentage of group number 1 responses in North Dakota, South Dakota, and Minnesota suggests that the informants in those states must have some special feelings about the term "bucket".

The next three runs of the program show how its user can compare the ways in which various groups of informants respond to a single questionnaire item. The three conversations on pages 56, 58, and 60 are identical, except that the run on page 56 (which produced the map on page 57) is limited to type-I informants, the run on page 58 (which produced the map on page 59) is limited to type II informants, and the run on page 60 (which produced the map on page 61) is limited to female informants.

While these runs were being made, it occurred to me that I should also find out what percentage of informants specified that a "bucket" was made of wood and what percentage of them specified that a "pail" was made of wood. So, taking another ten minutes, I ran the program again and had the conversation shown on pages 62 and 63. This is almost a repetition of the conversation on pages 51 and 52; this time, however, I chose to have four groups of responses, and I assigned "bucket" to group number 1, "pail" to group number 2, "wood bucket" and "wooden bucket" to group number 3, and "wood pail" and "wooden pail" to group number 4. The resulting map is shown on page 64; some of the percentages on that map and on the map on page 53 are, of course, identical.

For the conversation on pages 65 and 66, I chose questionnaire item 0370 and I chose to use all the responses given by all the informants. I also chose to have three groups of responses: one containing only the response "sunrise", one containing only the response "sunup", and one containing all of the types of responses that included the morpheme "dawn". The resulting map with percentages is shown on page 67.

I then wanted to compare the way informants of type I responded to questionnaire item 0370 with the way informants of all types had responded to it. I therefore ran the program again, and had the conversation shown on page 68. This is identical with the previous conversation, except that I replied "Y" when the program asked me whether I wanted to limit informants to only one type, and I replied "I" when it asked me which type of informants I wanted. The resulting map is shown on page 69, and may be compared with the map shown on page 67.

In addition to drawing maps with percentages, this program can calculate percentages for the region as a whole. During the conversation on pages 70 and 71, I replied "P" to the program's first question, but I replied "N" when it asked me whether I wanted to draw a map. Therefore, the program did not ask me how I wanted to limit informants, but instead asked me how I wanted to separate them. I replied that I wanted to separate them according to both type and sex. Just as it had for other calculations of percentages, the program then told me what types of responses had been given for

the questionnaire item which I had chosen, asked me how many groups of responses I wanted, and asked me what types of responses should be included in each group. I assigned "sunrise" to group number 1, "sunup" to group number 2, and all of the responses that contained the morpheme "dawn" to group number 3. Instead of drawing a map, the program then wrote out the table shown on page 71. This table states that, for example, 69% of all type I, male informants gave the response "sunrise" (group number 1) to this questionnaire item, 39% of these informants gave the response "sunup" (group number 2), and 3% of these informants gave responses assigned to group number 3. (Some lists of percentages written out by this program will add to more than 100% because of informants who gave more than one response.) This table shows percentages for each group of informants having the same type and sex, and also shows percentages for all the informants having the same type, for all the informants having the same sex, and for all of the informants taken together.

The three conversations shown on pages 72, 73, and 74 are almost the same as that shown on pages 70 and 71. The only differences are that on page 72 I chose to separate the informants only according to type, on page 73 I chose to separate them only according to sex, and on page 74 I chose not to separate them at all. The tables written out on pages 72, 73, and 74 are identical with the summations around the edges of the large table on page 71, but it may be convenient, for publication or some other purpose, to have these percentages written out in one of these ways.

The next three conversations with the program show how the types of responses to a single questionnaire item may be grouped in different ways when percentages are being calculated. On pages 75 and 76, some of the responses for item 1410 were divided into four groups: "bucket" alone, "pail" alone, "bucket" with the qualifier "wood" or "wooden", and "pail" with one of the same qualifiers. The table on page 76 shows the informants' use of these four groups, with the informants separated according to both type and sex. For the conversation on pages 77 and 78, the responses for the same questionnaire item were assigned to three groups: single-word terms for the object, terms which describe only what the object is made of, and terms which describe only what the object

typically contains. For the conversation on pages 79 and 80, the responses for the same questionnaire item are divided into three groups, which are the same as the groups that were used for the conversation and map shown on pages 51, 52, and 53.

These are samples of all the kinds of sorting that this program can do, and of all the kinds of maps that it can draw. I should mention that the actual appearance of the conversations printed out by this program will depend, to some extent, on the available hardware. A teletype would probably be the most convenient input/output device, since it automatically produces a strip of paper with the conversation typed on it. For the program that I have shown you here, the computer wrote the conversation onto the TV screen of the input/output device; in order to get a printed record of the conversation, I had to write that conversation into a magnetically-recorded file inside the computer and then print out that file onto the line printer.

To summarize and conclude, I would say again that this computer program is, essentially, simply a mechanization of techniques which geographical dialectology has been using for many years. But the speed with which this program can do these things may make it possible for dialectologists to explore many hypotheses and make many correlations of data which they otherwise could not explore or make for sheer lack of lifetime.

THIRD INTERNATIONAL CONFERENCE ON METHODS IN DIALECTOLOGY

"Interactive Computer Programs for Sorting and Mapping Dialect Data"

Earl M. Herrick, English Department, Texas A&I University, Kingsville, Texas 78363

DATA FILE WITH THE RESPONSES GIVEN BY THE INFORMANTS.

```
000 0 0370 "SUNRISE"
  1 0      SUNRISE
  2 0      SUNRISE
  2 1      DAYBREAK
  3 0      SUNRISE
  4 0      SUNRISE
  4 1      DAYLIGHT
  5 0      SUNRISE
  5 1      DAYBREAK
  6 0      SUNRISE
  7 0 S    SUNRISE
  7 1      DAWN OF DAY
  7 2      SUNUP
  8 0      SUNRISE
  8 1      DAWN
  8 2      DAYBREAK
  9 0      SUNRISE
 10 0      SUNRISE
 11 0      CRACK OF DAWN
 11 1 HS   SUNUP
 12 0      DAYLIGHT
 12 1      SUNUP
 13 0      SUNRISE
 14 0      SUNRISE
 15 0      SUNRISE
 16 0      SUNRISE
 17 0      SUNRISE
 18 0      SUNRISE
 18 1      DAWN
 19 0      SUNRISE
 20 0      SUNRISE
 20 1 HC   SUNUP
 21 0      SUNRISE
 22 0      SUNRISE
 23 0      SUNRISE
 23 1 HC   SUNUP
 24 0      SUNRISE
 25 0      SUNRISE
 26 0      SUNUP
 27 0      SUNRISE
 28 0      SUNUP
 29 0      SUNRISE
 30 0      SUNRISE
 31 0      SUNRISE
 32 0      SUNRISE
 33 0      DAWN
 34 0      SUNUP
 35 0      SUNRISE
 36 0      DAYLIGHT
 37 0      SUNRISE
 37 1      BREAK OF DAY
 38 0      SUNRISE
 39 0      SUNRISE
 40 0      SUNRISE
 41 0      SUNUP
 42 0      SUNRISE
 42 1      DAYLIGHT
 43 0      SUNRISE
 44 0      SUNRISE
 45 0 AM   SUNRISE
 46 0      SUNRISE
 46 1      SUNUP
 47 0      SUNRISE
 47 1      SUNUP
 48 0      SUNRISE
 49 0      SUNRISE
 50 0      SUNUP
 51 0      SUNRISE
 52 0      SUNRISE
 53 0      SUNRISE
 54 0      SUNUP
 55 0      DAYBREAK
 55 1 OF   SUNUP
 56 0      SUNRISE
 56 1 C    THE SUN
 57 0      SUNRISE
 58 0      SUNUP
 59 0      SUNRISE
 60 0      SUNRISE
 60 1 AM   SUNUP
 61 0
 62 0      SUNUP
 63 0      SUNUP
 64 0      SUNRISE
 65 0      SUNRISE
101 0      SUNRISE
102 0      SUNRISE
103 0      SUNRISE
104 0      SUNRISE
105 0      SUNRISE
106 0      SUNRISE
107 0      SUNRISE
108 0      SUNRISE
109 0      SUNRISE
110 0      SUNRISE
111 0      SUNRISE
112 0      SUNRISE
113 0      SUNUP
114 0      SUNRISE
115 0      SUNRISE
116 0      SUNUP
117 0      SUNUP
118 0
119 0      SUNRISE
120 0      SUNRISE
121 0      SUNRISE
122 0      SUNRISE
123 0      SUNRISE
124 0      SUNUP
125 0      SUNUP
126 0      SUNRISE
127 0      SUNRISE
128 0      SUNUP
129 0      SUNRISE
130 0      SUNRISE
131 0      SUNRISE
132 0      SUNUP
133 0      SUNRISE
134 0      SUNRISE
135 0      SUNRISE
136 0      SUNRISE
137 0      SUNRISE
```

```
138 0       SUNRISE
152 0       SUNRISE
139 0       SUNRISE
139 1 X     SUNUP
140 0       SUNRISE
141 0       SUNRISE
142 0       SUNUP
143 0       SUNRISE
144 0       SUNRISE
144 1 HC    SUNUP
145 0       SUNUP
146 0       SUNUP
147 0       SUNUP
148 0       SUNRISE
149 0       SUNRISE
150 0       DAWN
150 1 HS    SUNRISE
151 0
201 0       SUNUP
202 0       SUNRISE
203 0       DAYBREAK
203 1       SUNUP
204 0 HC    SUNRISE
204 1       SUNUP
205 0       SUNRISE
206 0       SUNRISE
207 0       SUNRISE
208 0       SUNRISE
209 0       SUNUP
210 0       SUNRISE
211 0       SUNRISE
212 0       SUNRISE
213 0       SUNRISE
214 0       SUNUP
215 0 HC    SUNRISE
215 1       SUNUP
216 0       SUNRISE
217 0       SUNRISE
218 0       SUNRISE
219 0       SUNRISE
219 1       DAYLIGHT
220 0 C     SUNUP
221 0       SUNRISE
222 0       SUNUP
223 0       SUNRISE
224 0       SUNUP
225 0       SUNRISE
225 1       DAWN
226 0       SUNRISE
226 1       DAWN
226 2       DAYLIGHT
301 0       SUNUP
302 0       SUNUP
303 0       SUNRISE
303 1       DAYBREAK
304 0       SUNUP
305 0       SUNRISE
306 0       SUNUP
307 0       SUNRISE
308 0       SUNRISE
309 0       SUNRISE
309 1       DAYLIGHT
310 0       SUNRISE
311 0       SUNRISE
312 0       SUNUP
326 0       SUNRISE
313 0       SUNUP
314 0       SUNRISE
314 1 C     SUNUP
315 0       SUNUP
316 0       SUNUP
317 0       SUNRISE
318 0       SUNUP
319 0       SUNRISE
320 0       SUNUP
```

```
321 0       SUNUP
322 0       SUNUP
323 0       SUNUP
324 0       SUNUP
325 0       SUNUP
327 0       SUNRISE
328 0       SUNUP
401 0       SUNRISE
402 0       SUNUP
403 0       SUNUP
404 0       SUNRISE
405 0       SUNUP
406 0       SUNRISE
407 0       SUNRISE
408 0       SUNUP
409 0       SUNUP
410 0       SUNRISE
411 0       SUNRISE
412 0       SUNUP
413 0       SUNRISE
414 0 C     SUNRISE
414 1       SUNUP
415 0 S     SUNRISE
416 0       SUNRISE
416 1       SUNUP
417 0       SUNUP
418 0       SUNRISE
419 0       SUNRISE
420 0       SUNRISE
421 0       SUNRISE
422 0       SUNUP
423 0       SUNUP
424 0       SUNRISE
425 0       SUNRISE
425 1       DAWN
426 0       SUNRISE
427 0       SUNRISE
427 1       SUNUP
428 0       SUNRISE
429 0       SUNUP
430 0       SUNUP
431 0       SUNRISE
432 0       SUNRISE
433 0       SUNRISE
434 0 F     SUNUP
435 0       SUNRISE
436 0       SUNUP
437 0       SUNUP
000 0 1410  "BUCKET (WOODEN)"
  1 0       BUCKET
  2 0       WOODEN BUCKET
  2 1       PAIL
  3 0       WOODEN PAIL
  4 0       BUCKET
  5 0       BUCKET
  6 0 C     BUCKET
  7 0 HC    BUCKET
  7 1       PAIL
  8 0       WOODEN BUCKET
  9 0       BUCKET
 10 0       WOODEN PAIL
 11 0       BUCKET
 12 0       WOODEN PAIL
 13 0       PAIL
 13 1       WOODEN WATER PAIL
 14 0       BUCKET
 15 0 CR    WOODEN BUCKET
 15 1 D     WOOD PAIL
 15 2 D     WOODEN PAIL
 16 0       PAIL
 17 0       BUCKET
 18 0       BUCKET
 18 1       PAIL
 19 0       WOODEN PAIL
 20 0       BUCKET
```

THE INFORMANTS' RESPONSES, AS GIVEN IN THE LINGUISTIC ATLAS OF THE UPPER MIDWEST.

3.7 We start to work before sunrise.
NE 73.

The usual responses are sunrise and sunup, the distribution of the latter indicating a Midland correlation. No significant contrasts appear among the three types of infs.

CL 2: Checklist responses confirm the field records. Sun-up has a 49% frequency in southern Iowa but only 31% in northern Iowa, with 58% in Nebraska and 38% in South Dakota, but only 8% in Minnesota and 17% in North Dakota.

break of day 37.
crack of dawn 11.
dawn 8, 18, 33; 150; 225-26; 425. ~ of day 7.
daybreak 2, 5, 8, 55; 203; 303.
daylight 4, 12, 36, 42; 219, 226; 309.
the sun c56.
sunrise 1-6, s7, 8-10, 13-25, 27, 29-32, 35, 37-40, 42-44, !45, 46-49, 51-53, 56-57, 59-60, 64-65; 101-12, 114-15, 119-23, 126-27, 129-31, 133-41, 143-44, 148-49, :150, 152; 202, ‡204, 205-8, 210-13, ‡215, ?16-19, 221, 223, 225-26; 303, 305, 307-11, 314, 317, 319, 326-27; 401, 404, 406-7, 410-11, 413, c414, s415, 416, 418-21, 424-28, 431-33, 435.
sunup 7, :11, 12, ‡20, ‡23, 26, 28, 34, 41, 46-47, 50, 54, †55, 58, !60, 62-63; 113, 116-17, 124-25, 128, 132, *139, 142, ‡144, 145-47; 201, 203-4, 209, 214-15, c220, 222, 224; 301-2, 304, 306, 312-13, cvr314, 315-16, 318, 320-25, 328; 402-3, 405, 408-9, 412, 414, 416-17, 422-23, 427, 429-30, f434, 436-37.
no response 61; 118, 151.

DATA FILE WITH PERSONAL INFORMATION ABOUT THE INFORMANTS.

1	I	M
2	II	F
3	I	F
4	I	F
5	I	F
6	I	M
7	I	M
8	II	M
9	III	M
10	I	F
11	I	F
12	II	M
13	I	M
14	II	F
15	I	M
16	I	F
17	II	M
18	III	M
19	I	M
20	II	F
21	I	M
22	II	F
23	I	M
24	II	M
25	I	M
26	II	F
27	I	M
28	II	F
29	I	M
30	II	M
31	I	F
32	I	F
33	II	F
34	III	M
35	I	M
36	I	F
37	II	M
38	III	M
39	I	F
40	II	F
41	I	M
42	II	F
43	II	M
44	I	M
45	I	M
46	I	F
47	II	M
48	I	M
49	II	F
50	III	M
51	I	M
52	I	M
53	II	M
54	II	M
55	I	M
56	I	M
57	II	M
58	III	M
59	I	M
60	II	F
61	II	M
62	I	M
63	II	F
64	II	F
65	I	F
101	I	M
102	II	F
103	I	F
104	I	F
105	II	M
106	II	F
107	I	M
108	II	M
109	I	M
110	III	F
111	II	M
112	I	M
113	I	M
114	I	M
115	II	F
116	I	F
117	I	M
118	I	F
119	II	M

```
120  II    MF
121  II    MF
122  III   MM
123  II    MM
124  II    MM
125  II    MM
126  I     MM
127  I     MM
128  II    MM
129  I     MM
130  II    MM
131  III   MF
132  I     MF
133  II    MF
134  II    MF
135  II    MF
136  II    MF
137  II    MF
138  II    MF
152  II    MF
139  I     MF
140  I     MM
141  I     MM
142  I     MM
143  I     MM
144  II    MF
145  II    MF
146  II    MF
147  II    MF
148  I     MF
149  II    MF
150  II    MF
151  I     MF
201  I     MF
202  II    MF
203  II    MF
204  I     MF
205  II    MF
206  I     MF
207  I     MF
208  II    MF
209  I     MF
210  II    MF
211  II    MF
212  I     MF
213  II    MF
214  I     MF
215  II    MF
216  I     MF
217  II    MF
218  I     MF
219  II    MF
220  I     MM
221  III   MM
222  III   MM
223  I     MM
224  I     MM
225  I     MM
226  II    MM
301  I     MM
302  II    MM
303  I     MM
304  II    MM
305  I     MM
306  I     MM
307  I     MM
308  II    MM
309  I     MM
310  II    MM
311  I     MM
312  II    MM
326  III   MF
313  II    MF
314  I     MF
315  II    MF
316  I     MF
```

```
317  I     FF
318  II    FF
319  III   FM
320  I     FF
321  II    MM
322  I     MM
323  II    MM
324  I     FF
325  II    FF
327  I     FF
328  II    FF
401  I     FF
402  II    FF
403  I     FF
404  II    FM
405  I     MM
406  II    MM
407  I     MM
408  II    MM
409  I     MM
410  II    MM
411  III   MM
412  II    MF
413  I     FF
414  II    FF
415  I     FM
416  II    MF
417  I     MM
418  I     MM
419  II    MM
420  II    MM
421  II    MM
422  I     MF
423  II    MF
424  I     MF
425  II    MF
426  III   MF
427  I     MF
428  II    MF
429  I     MM
437  II    MM
430  II    MM
431  II    MM
432  I     MM
433  II    MF
434  I     MM
435  II    MM
436  II    MM
```

```
➤ EXEC 'KFEMHØØ.DIALECTS.PREPARE'

➤ EXEC 'KFEMHØØ.DIALECTS.RUN'


   THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
   NORTH AND SOUTH DAKOTA.
   ----------------------------------------

   DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
     PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
     AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ S

   WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 1310

   DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

   DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

   DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

   FOR QUESTIONNAIRE ITEM  1310:
           THESE TYPES OCCUR:
   (QUAN)
        1     CATTLE RANGE
        1     COMMONS
        3     GRAZING LAND
       54     PASTURE
        9     RANGE
        1     STOCK RANGE
        1     SUMMER RANGE
        1     WINTER RANGE

   EACH KIND OF RESPONSE MAY BE REPRESENTED ON THE MAP
     BY A SYMBOL CONSISTING OF ONE GEOMETRICAL SHAPE AND
     (OPTIONALLY) ONE ADDITIONAL LINE.
   THE AVAILABLE SHAPES ARE: SQUARE (S), TRIANGLE (T),
     DIAMOND (D), HEXAGRAM (H), AND CROSS (C).
   THE AVAILABLE ADDITIONAL LINES ARE: VERTICAL (1),
     DIAGONAL (2), HORIZONTAL (3), AND REVERSE DIAGONAL (4).
   (TO DRAW NO SYMBOL FOR A KIND OF RESPONSE, TYPE A SPACE.
     TO DRAW A SYMBOL WITHOUT AN ADDITIONAL LINE, TYPE A
     SPACE AFTER THE LETTER DESIGNATING THE SHAPE.)

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "CATTLE RANGE                                          "?
➤ H1

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "COMMONS                                               "?
➤ C

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "GRAZING LAND                                          "?
➤ D

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "PASTURE                                               "?
➤ S

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "RANGE                                                 "?
➤ T

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "STOCK RANGE                                           "?
➤ H2
```

```
WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"SUMMER RANGE                                    "?
➤ H3

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"WINTER RANGE                                    "?
➤ H4

THE SCATTERGRAM WHICH YOU REQUESTED HAS BEEN DRAWN.

DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ Y

STATE BOUNDARIES?
➤ Y

MISSOURI RIVER?
➤ N

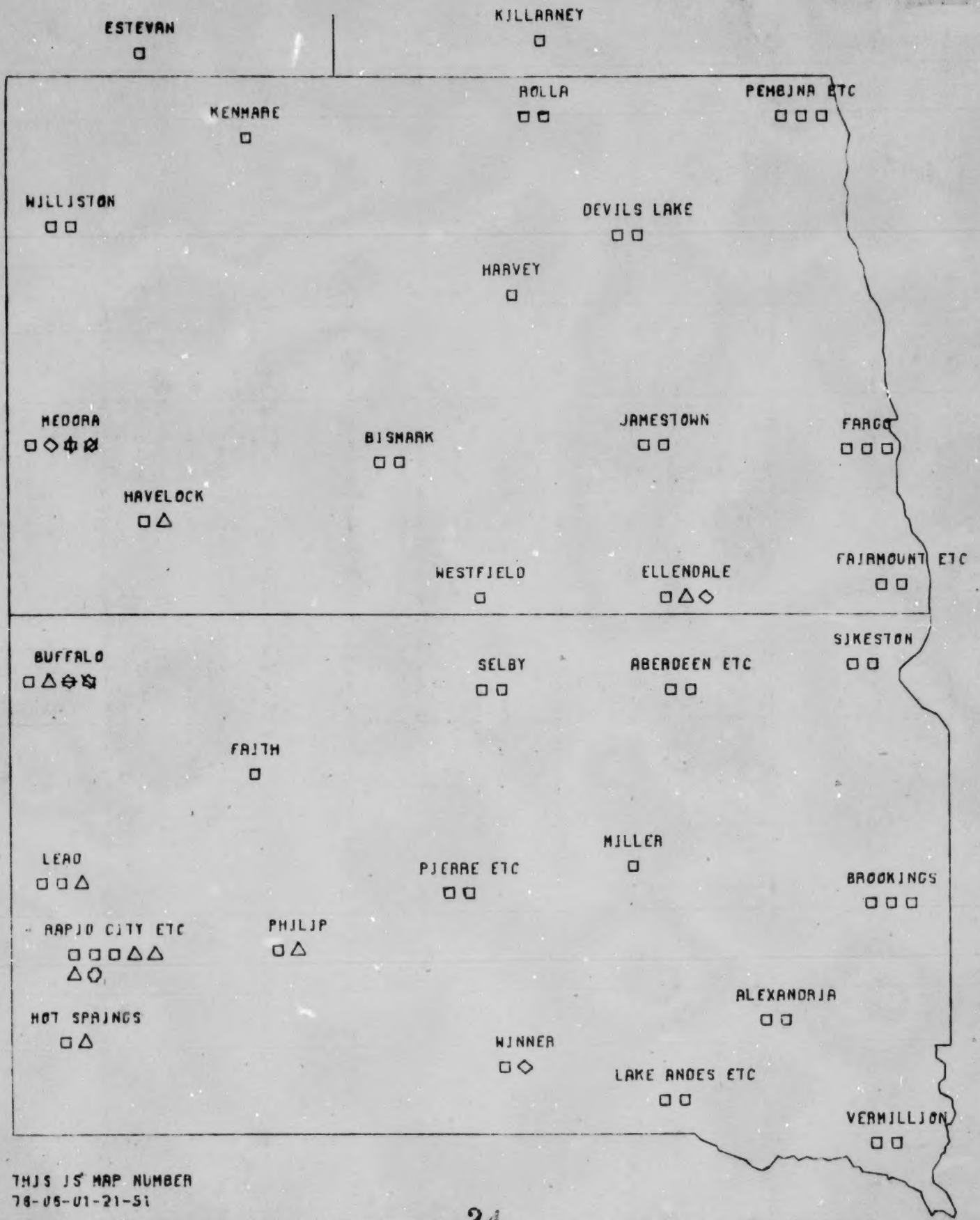
FRONTIER OF 1890?
➤ N

THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ Y

THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

THIS IS MAP NUMBER
78-08-01-21-51
```



THIS IS MAP NUMBER
78-05-01-21-51

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
-----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤S

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤1310

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤R

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤N

FOR QUESTIONNAIRE ITEM  1310:
          THESE TYPES OCCUR:
(QUAN)
     1    CATTLE RANGE
     1    COMMONS
     3    GRAZING LAND
    54    PASTURE
     9    RANGE
     1    STOCK P.
     1    SUM.
     1

SAME CONVERSATION AS FOR MAP NUMBER 78-08-01-21-51

ON PAGES 5 & 6

                                                    "?
                          .ILL REPRESENT
                                                    "?
                    .DDITIONAL LINE WILL REPRESENT
                                                    "?
   .I SHAPE AND ADDITIONAL LINE WILL REPRESENT
"WINTER RANGE                                       "?
➤H4

THE SCATTERGRAM WHICH YOU REQUESTED HAS BEEN DRAWN.

DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤Y

STATE BOUNDARIES?
➤Y

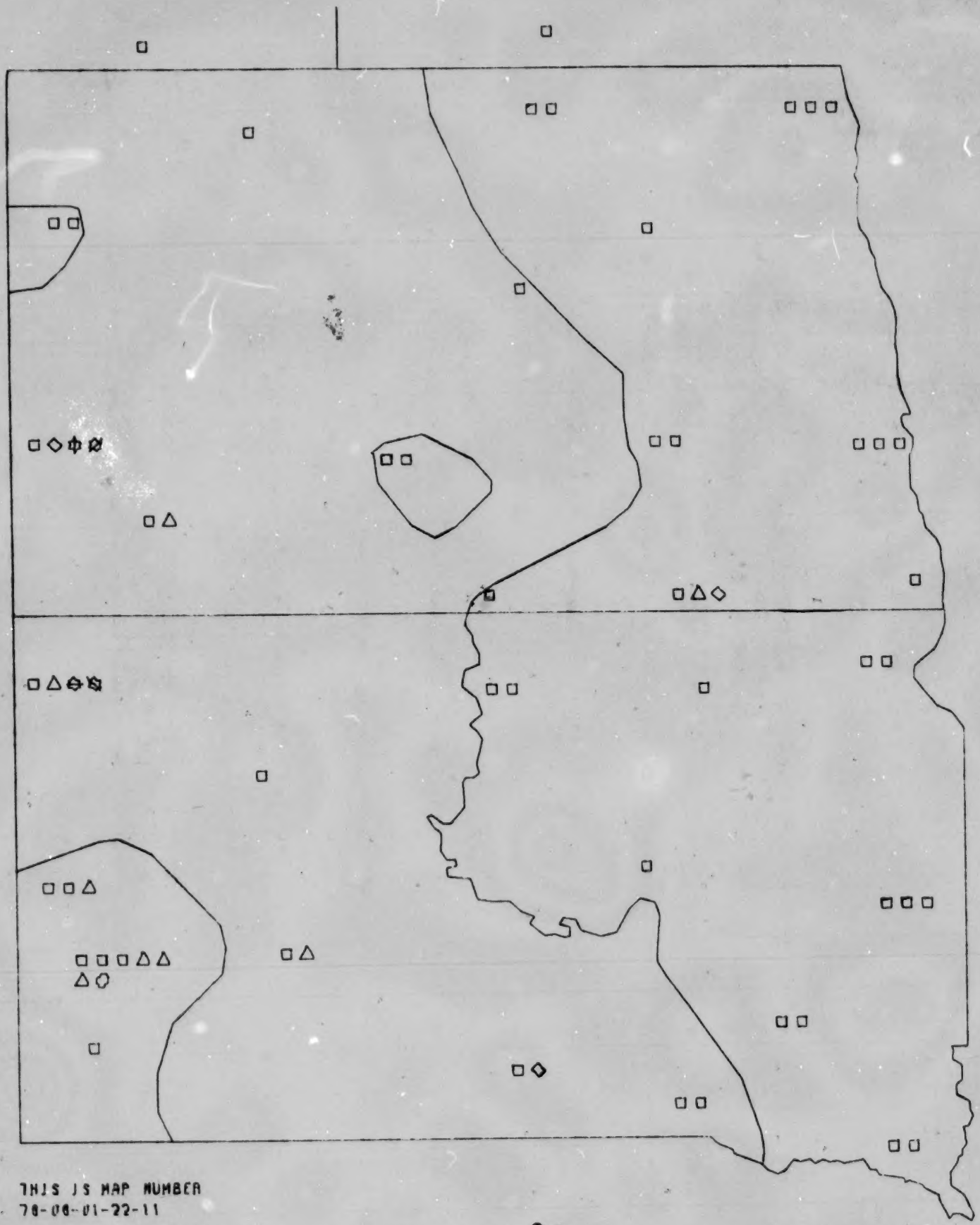
MISSOURI RIVER?
➤N

FRONTIER OF 1890?
➤Y

THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤N

THIS IS MAP NUMBER
78-08-01-22-11
```



THIS IS MAP NUMBER
78-06-01-22-11

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
---------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤S

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤1310

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤Y
WHICH TYPE?
➤I

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤N

FOR QUESTIONNAIRE ITEM  1310:
          THESE TYPES OCCUR:
(QUAN)
     1    CATTLE RANGE
     1    COMMONS
     3    GRAZING LAND
    54    PASTURE
     9    RANGE
     1    STOCK R..
     1    ..

SAME CONVERSATION AS FOR MAP NUMBER 78-08-01-21-51

ON PAGES 5 & 6

                                                        "?

                                                        "?
➤H4

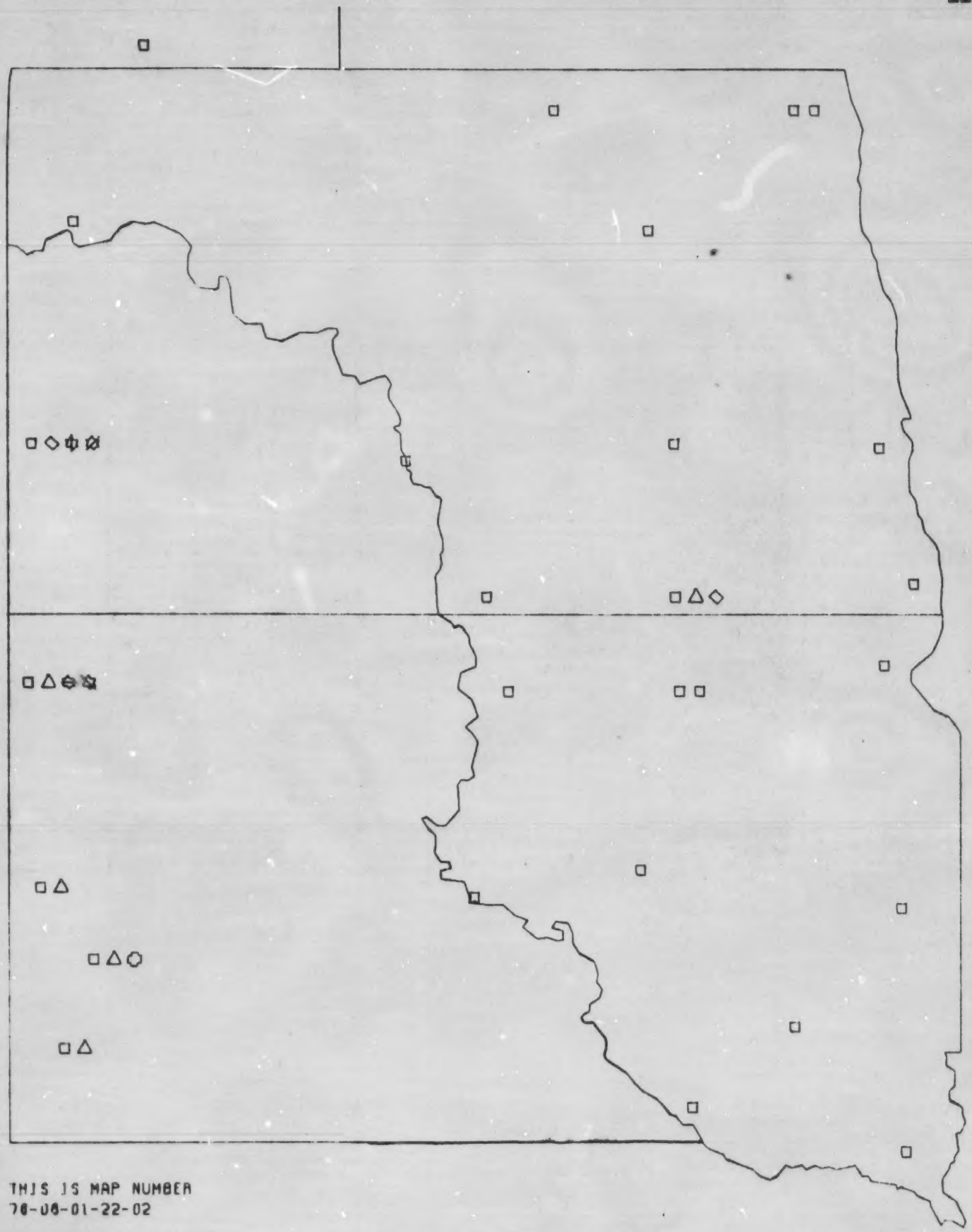
THE SCATTERGRAM WHICH YOU REQUESTED HAS BEEN DRAWN.
DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤Y

STATE BOUNDARIES?
➤Y

MISSOURI RIVER?
➤Y

FRONTIER OF 1890?
➤N
THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.
DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤N

THIS IS MAP NUMBER
78-08-01-22-02
```



THIS IS MAP NUMBER
76-06-01-22-02

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
-----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ S

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 1310

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ Y
WHICH SEX?
➤ F

FOR QUESTIONNAIRE ITEM  1310:
          THESE TYPES OCCUR:
(QUAN)
     1    CATTLE RANGE
     1    COMMONS
     3    GRAZING LAND
    54    PASTURE
     9    RANGE
     1    STOCK RANGE
     1    SUMMER RANGE
     1    WINTER RANGE

EACH KIND OF
  BY A

SAME CONVERSATION AS FOR MAP NUMBER 78-08-01-21-51

ON PAGES 5 & 6

                                                    "?

                                  REPRESENT         "?

          AND ADDITIONAL LINE WILL REPRESENT        "?
➤ HAYNER RANGE

THE SCATTERGRAM WHICH YOU REQUESTED HAS BEEN DRAWN.

DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ N

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ N

THIS IS MAP NUMBER
78-08-01-22-21
```

THIS IS MAP NUMBER
76-06-01-22-21

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
-----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ S

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 2430

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM  2430:
          THESE  TYPES  OCCUR:
(QUAN)
     1     BAYOU
     5     BOG
     1     BOG HOLE
     1     BOGGY
     1     BOGGY LAND
     4     BOGGY PLACE
     1     HAY SLOUGH
     2     LAKE BED
     1     LOBLOLLY
     7     MARSH
     6     MARSHY LAND PLACE
    46     SLOUGH
     1     SLOUGHY GROUND
     2     SWALE
    17     SWAMP
     4     SWAMP LAND
     1     SWAMPY
     1     SWAMPY AREA

EACH KIND OF RESPONSE MAY BE REPRESENTED ON THE MAP
  BY A SYMBOL CONSISTING OF ONE GEOMETRICAL SHAPE AND
  (OPTIONALLY) ONE ADDITIONAL LINE.
THE AVAILABLE SHAPES ARE: SQUARE (S), TRIANGLE (T),
  DIAMOND (D), HEXAGRAM (H), AND CROSS (C).
THE AVAILABLE ADDITIONAL LINES ARE: VERTICAL (1),
  DIAGONAL (2), HORIZONTAL (3), AND REVERSE DIAGONAL (4).
(TO DRAW NO SYMBOL FOR A KIND OF RESPONSE, TYPE A SPACE.
  TO DRAW A SYMBOL WITHOUT AN ADDITIONAL LINE, TYPE A
  SPACE AFTER THE LETTER DESIGNATING THE SHAPE.)

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
*BAYOU                                                  "?
➤ D1

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
*BOG                                                    "?
➤ H

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
*BOG HOLE                                               "?
➤ H1

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
*BOGGY                                                  "?
➤ H2

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
*BOGGY LAND                                             "?
➤ H3
```

```
   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "BOGGY PLACE                                    "?
➤ H4

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "HAY SLOUGH                                     "?
➤ S2

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "LAKE BED                                       "?
➤ D

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "LOBLOLLY                                       "?
➤ D2

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "MARSH                                          "?
➤ T

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "MARSHY LAND PLACE                              "?
➤ T2

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "SLOUGH                                         "?
➤ S

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "SLOUGHY GROUND                                 "?
➤ S1

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "SWALE                                          "?
➤ D3

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "SWAMP                                          "?
➤ C1

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "SWAMP LAND                                     "?
➤ C2

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "SWAMPY                                         "?
➤ C3

   WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
   "SWAMPY AREA                                    "?
➤ C4

   THE SCATTERGRAM WHICH YOU REQUESTED HAS BEEN DRAWN.

   DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ Y

   STATE BOUNDARIES?
➤ Y

   MISSOURI RIVER?
➤ N

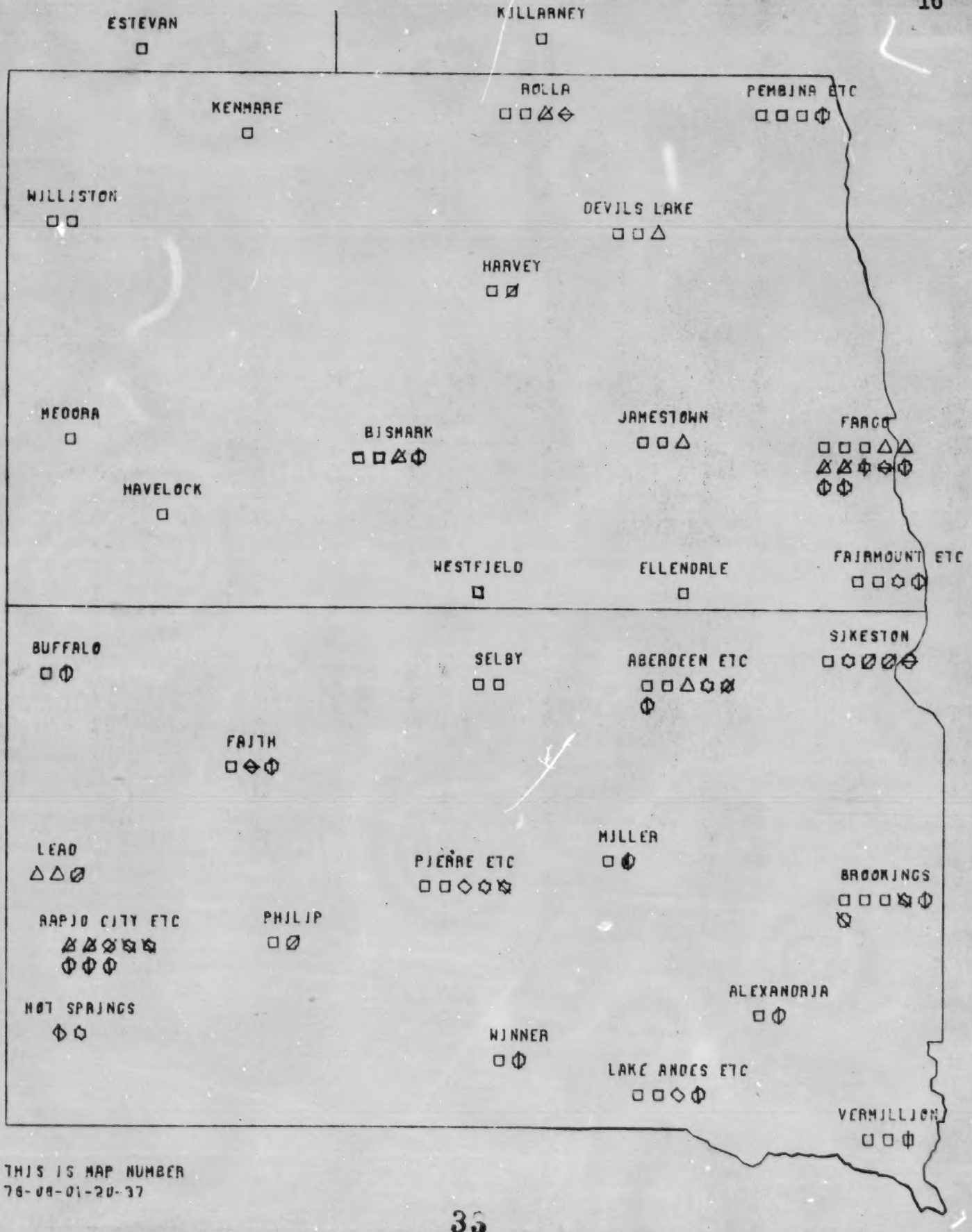
   FRONTIER OF 1890?
➤ N

   THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.

   DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ Y

   THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

   THIS IS MAP NUMBER
   78-08-01-20-37
```



THIS IS MAP NUMBER
76-08-01-20-37

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THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
-----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ S

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 4420

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM  4420:
          THESE TYPES OCCUR:
(QUAN)
     7    CORN ON THE COB
     2    FIELD CORN
     5    GREEN CORN
    11    ROASTING EARS
     1    SQUAW CORN
    43    SWEET CORN
     1    TABLE CORN
     1    YOUNG FIELD CORN

EACH KIND OF RESPONSE MAY BE REPRESENTED ON THE MAP
  BY A SYMBOL CONSISTING OF ONE GEOMETRICAL SHAPE AND
  (OPTIONALLY) ONE ADDITIONAL LINE.
THE AVAILABLE SHAPES ARE: SQUARE (S), TRIANGLE (T),
  DIAMOND (D), HEXAGRAM (H), AND CROSS (C).
THE AVAILABLE ADDITIONAL LINES ARE: VERTICAL (1),
  DIAGONAL (2), HORIZONTAL (3), AND REVERSE DIAGONAL (4).
(TO DRAW NO SYMBOL FOR A KIND OF RESPONSE, TYPE A SPACE.
  TO DRAW A SYMBOL WITHOUT AN ADDITIONAL LINE, TYPE A
  SPACE AFTER THE LETTER DESIGNATING THE SHAPE.)

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"CORN ON THE COB                                    "?
➤ D

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"FIELD CORN                                         "?
➤ C

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"GREEN CORN                                         "?
➤ H

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"ROASTING EARS                                      "?
➤ S

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"SQUAW CORN                                         "?
➤ D1

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"SWEET CORN                                         "?
➤ T

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"TABLE CORN                                         "?
➤ D2

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"YOUNG FIELD CORN                                   "?
➤ C3
```

THE SCATTERGRAM WHICH YOU REQUESTED HAS BEEN DRAWN.

DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ Y

STATE BOUNDARIES?
➤ Y

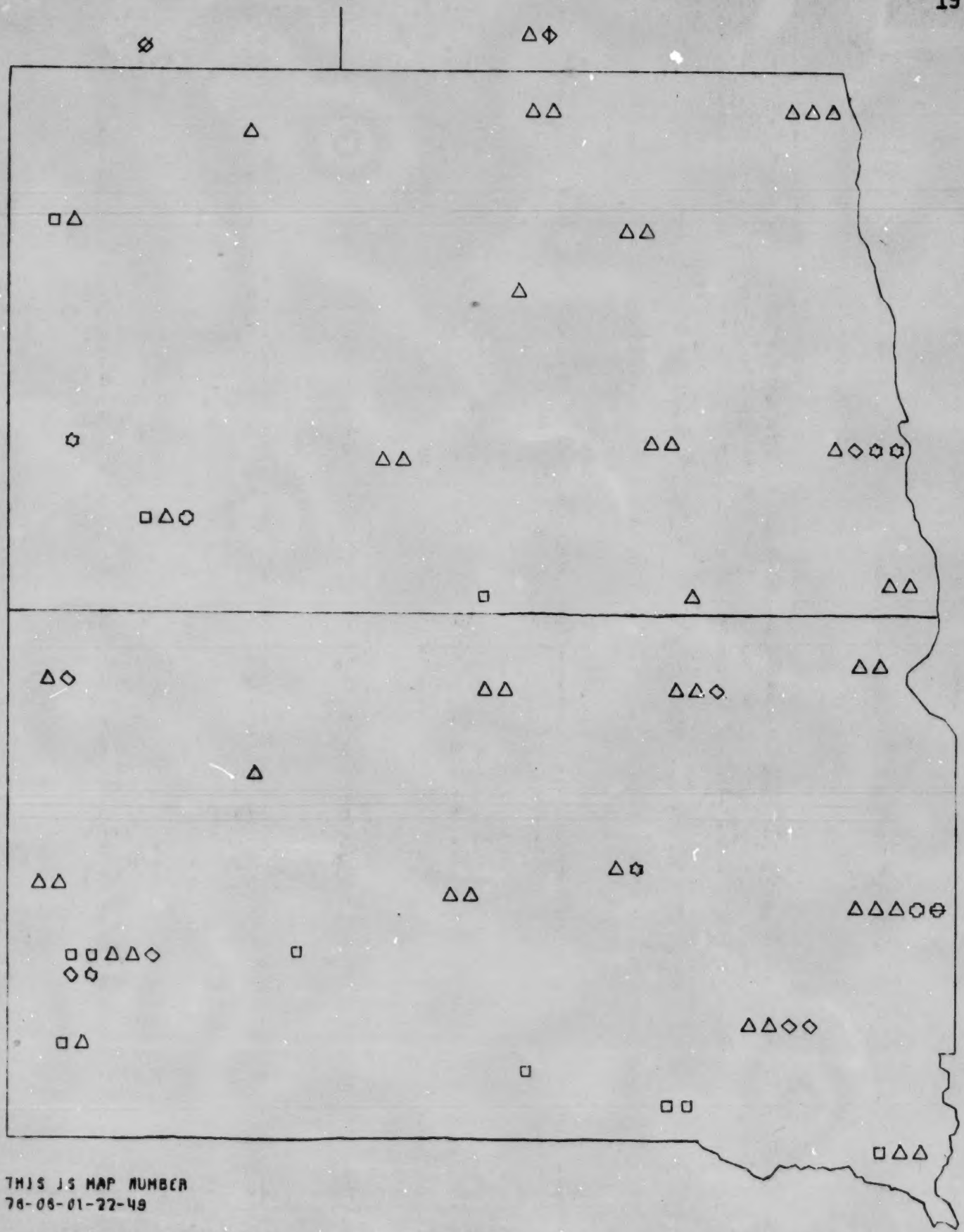
MISSOURI RIVER?
➤ N

FRONTIER OF 1890?
➤ N

THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ N

THIS IS MAP NUMBER
78-08-01-22-49



THIS IS MAP NUMBER
76-06-01-22-49

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
---------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ S

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 4570

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM  4570:
        THESE TYPES OCCUR:
(GUAN)
     2      ARTIC OWL
     3      BARN OWL
     1      BURROWING OWL
     1      CAT OWL
     2      GRAY OWL
     2      GREAT HORNED OWL
     1      GREY OWL
     6      GROUND OWL
    29      HOOT OWL
     1      HORN OWL
     4      HORNED OWL
     1      MONKEY-FACED OWL
    13      NIGHT OWL
     2      PRAIRIE DOG OWL
     2      PRAIRIE OWL
    10      SCREECH OWL
     1      SNOW OWL
     1      SQUEECH OWL

EACH KIND OF RESPONSE MAY BE REPRESENTED ON THE MAP
  BY A SYMBOL CONSISTING OF ONE GEOMETRICAL SHAPE AND
  (OPTIONALLY) ONE ADDITIONAL LINE.
THE AVAILABLE SHAPES ARE: SQUARE (S), TRIANGLE (T),
  DIAMOND (D), HEXAGRAM (H), AND CROSS (C).
THE AVAILABLE ADDITIONAL LINES ARE: VERTICAL (1),
  DIAGONAL (2), HORIZONTAL (3), AND REVERSE DIAGONAL (4).
(TO DRAW NO SYMBOL FOR A KIND OF RESPONSE, TYPE A SPACE.
  TO DRAW A SYMBOL WITHOUT AN ADDITIONAL LINE, TYPE A
  SPACE AFTER THE LETTER DESIGNATING THE SHAPE.)

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"ARTIC OWL                                          "?
➤ H1

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"BARN OWL                                           "?
➤

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"BURROWING OWL                                      "?
➤

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"CAT OWL                                            "?
➤

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"GRAY OWL                                           "?
➤

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"GREAT HORNED OWL                                   "?
➤
```

```
WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"GREY OWL                                              "?
➤

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"GROUND OWL                                            "?
➤ D

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"HOOT OWL                                              "?
➤

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"HORN OWL                                              "?
➤

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"HORNED OWL                                            "?
➤

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"MONKEY-FACED OWL                                      "?
➤

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"NIGHT OWL                                             "?
➤

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"PRAIRIE DOG OWL                                       "?
➤ T2

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"PRAIRIE OWL                                           "?
➤ T1

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"SCREECH OWL                                           "?
➤

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"SNOW OWL                                              "?
➤ H3

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"SQUEECH OWL                                           "?
➤

THE SCATTERGRAM WHICH YOU REQUESTED HAS BEEN DRAWN.

DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ Y

STATE BOUNDARIES?
➤ Y

MISSOURI RIVER?
➤ N

FRONTIER OF 1890?
➤ N

THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ N

THIS IS MAP NUMBER
78-08-02-17-41
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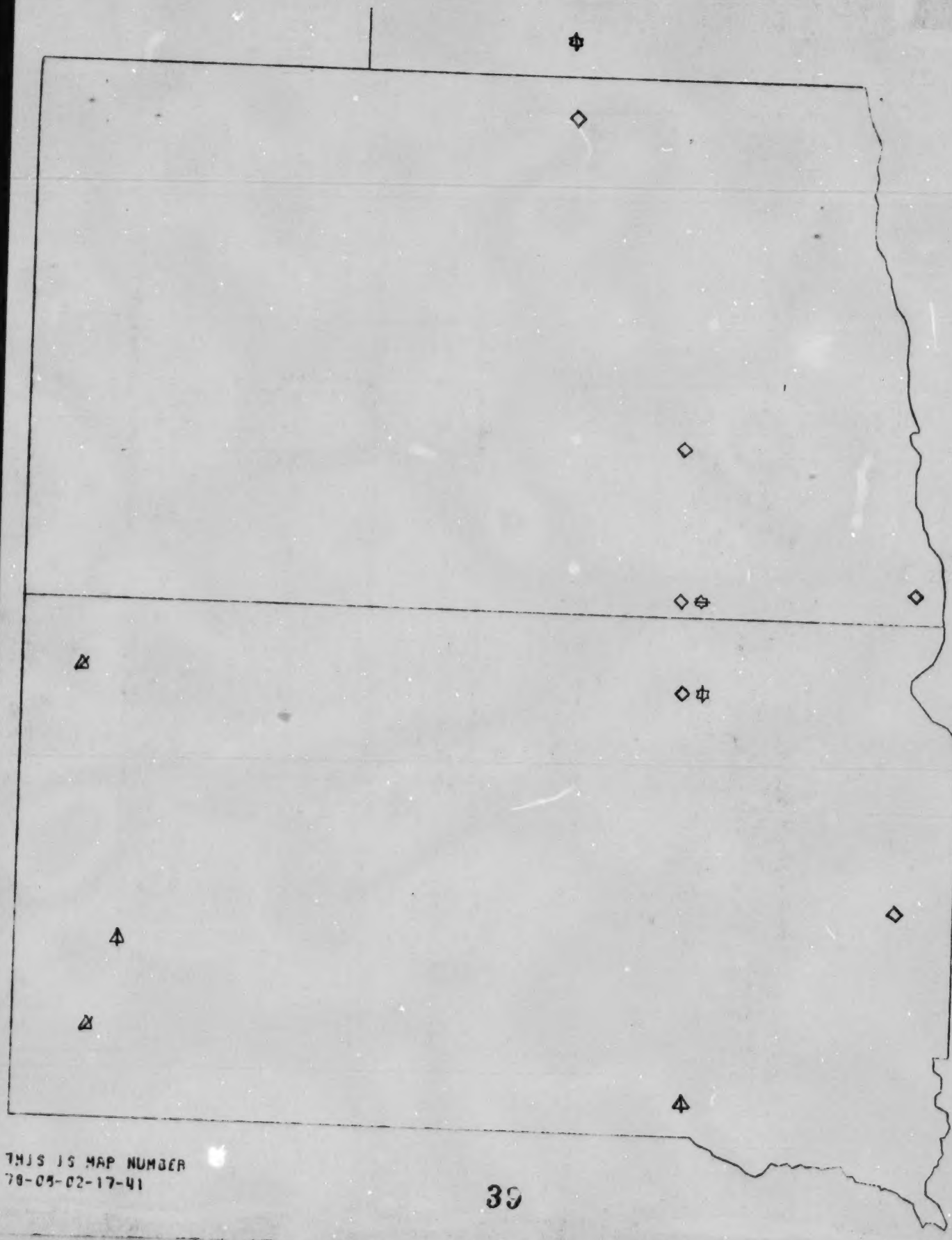


THIS IS MAP NUMBER
78-05-02-17-41

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
-----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤S

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤1310

DO YCU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤N

FOR QUESTIONNAIRE ITEM  1310:
(QUAN)      THESE TYPES OCCUR:
     1      CATTLE RANGE
     1      COMMONS
     3      GRAZING LAND
    54      PASTURE
     9      RANGE
     1      STOCK RANGE
     1      SUMMER RANGE
     1      WINTER RANGE

EACH KIND OF RESPONSE MAY BE REPRESENTED ON THE MAP
  BY A SYMBOL CONSISTING OF ONE GEOMETRICAL SHAPE AND
  (OPTIONALLY) ONE ADDITIONAL LINE.
THE AVAILABLE SHAPES ARE: SQUARE (S), TRIANGLE (T),
  DIAMOND (D), HEXAGRAM (H), AND CROSS (C).
THE AVAILABLE ADDITIONAL LINES ARE: VERTICAL (1),
  DIAGONAL (2), HORIZONTAL (3), AND REVERSE DIAGONAL (4).
(TO DRAW NO SYMBOL FOR A KIND OF RESPONSE, TYPE A SPACE.
  TO DRAW A SYMBOL WITHOUT AN ADDITIONAL LINE, TYPE A
  SPACE AFTER THE LETTER DESIGNATING THE SHAPE.)

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"CATTLE RANGE
➤T
                                                        "?

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"COMMONS
➤
                                                        "?

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"GRAZING LAND
➤D
                                                        "?

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"PASTURE
➤S
                                                        "?

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"RANGE
➤T
                                                        "?

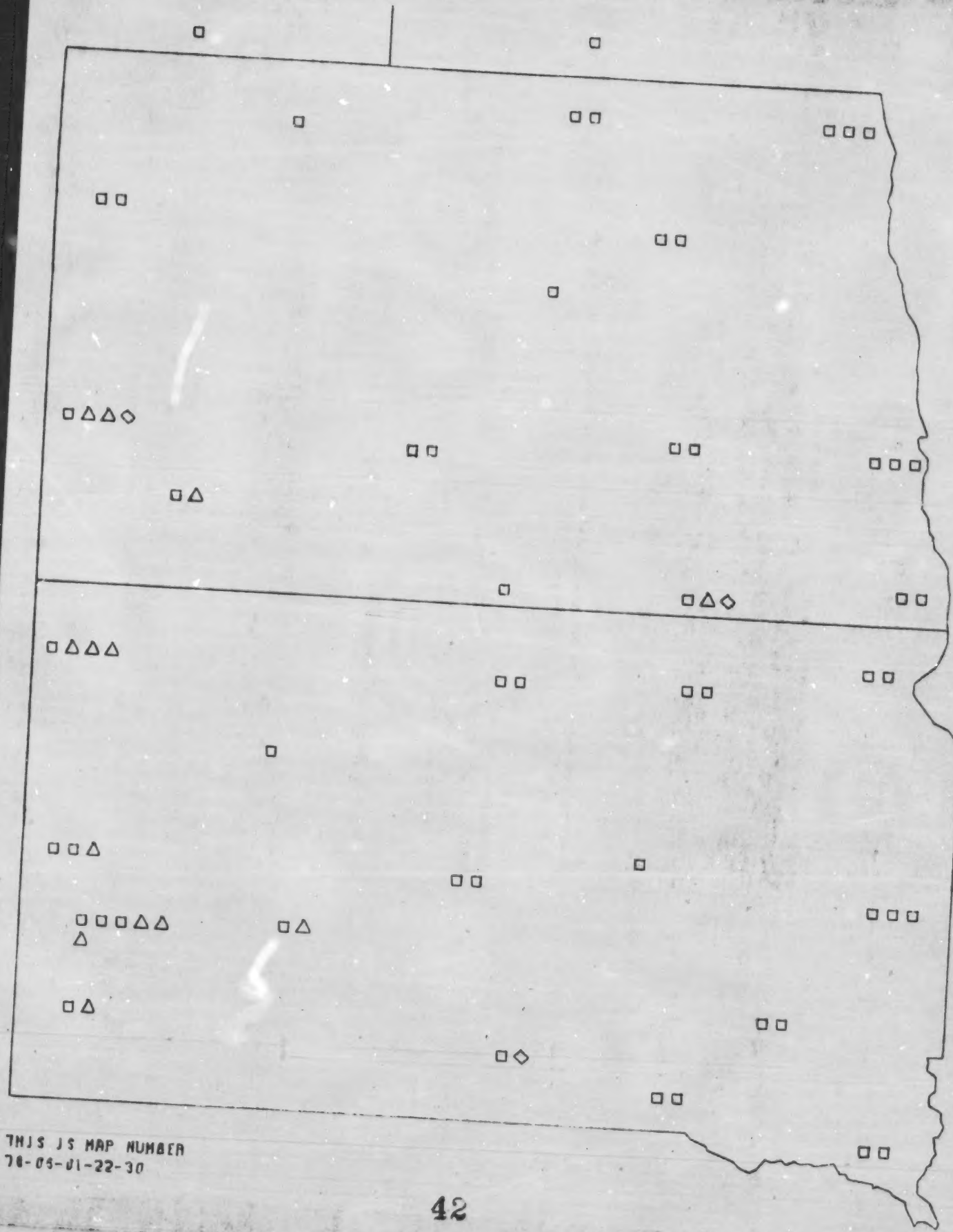
WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"STOCK RANGE
➤T
                                                        "?

WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"SUMMER RANGE
➤T
                                                        "?

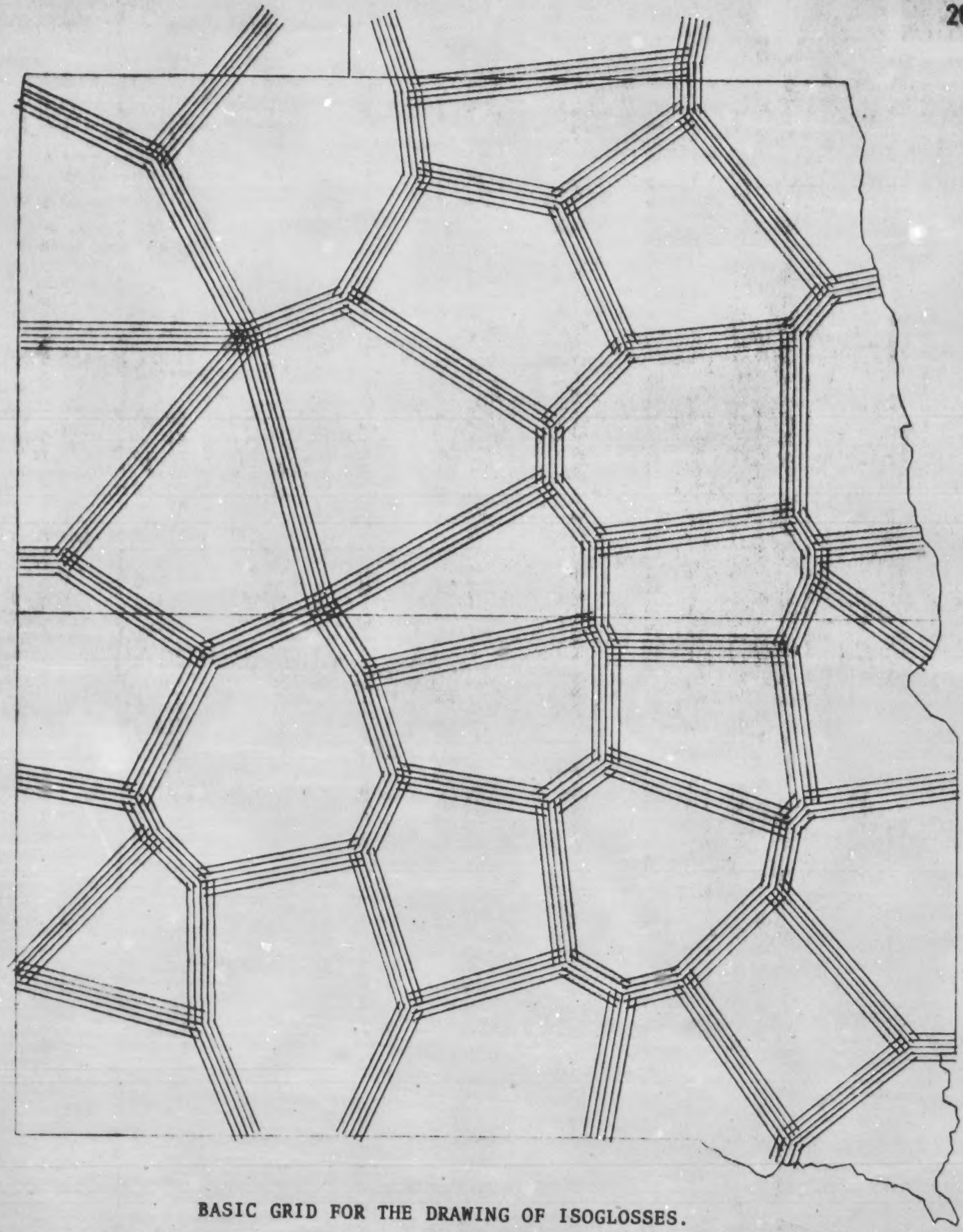
WHAT SHAPE AND ADDITIONAL LINE WILL REPRESENT
"WINTER RANGE
➤T
                                                        "?
```

```
THE SCATTERGRAM WHICH YOU REQUESTED HAS BEEN DRAWN.
DO YOU WANT TO DRAW ANY SPECIAL LINES?
Y
STATE BOUNDARIES?
Y
MISSOURI RIVER?
N
FRONTIER OF 1890?
N
THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.
DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
N

THIS IS MAP NUMBER
78-08-01-22-30
```



THIS IS MAP NUMBER
76-06-01-22-30



BASIC GRID FOR THE DRAWING OF ISOGLOSSES.

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ I

WHICH QUESTIONNAIRE ITEMS DO YOU WANT?
(TYPE THEM IN ONE BY ONE; AFTER THE LAST, TYPE "0".
YOU CANNOT HAVE MORE THAN EIGHT.)
➤ 1310
➤ 0

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM  1310:
          THESE TYPES OCCUR:
(QUAN)
     1    CATTLE RANGE
     1    COMMONS
     3    GRAZING LAND
    54    PASTURE
     9    RANGE
     1    STOCK RANGE
     1    SUMMER RANGE
     1    WINTER RANGE

IS "CATTLE RANGE                                                "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "COMMONS                                                     "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "GRAZING LAND                                                "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "PASTURE                                                     "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "RANGE                                                       "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I

IS "STOCK RANGE                                                 "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "SUMMER RANGE                                                "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "WINTER RANGE                                                "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

THE ISOGLOSSES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ Y
```

STATE BOUNDARIES?
➤ Y

MISSOURI RIVER?
➤ N

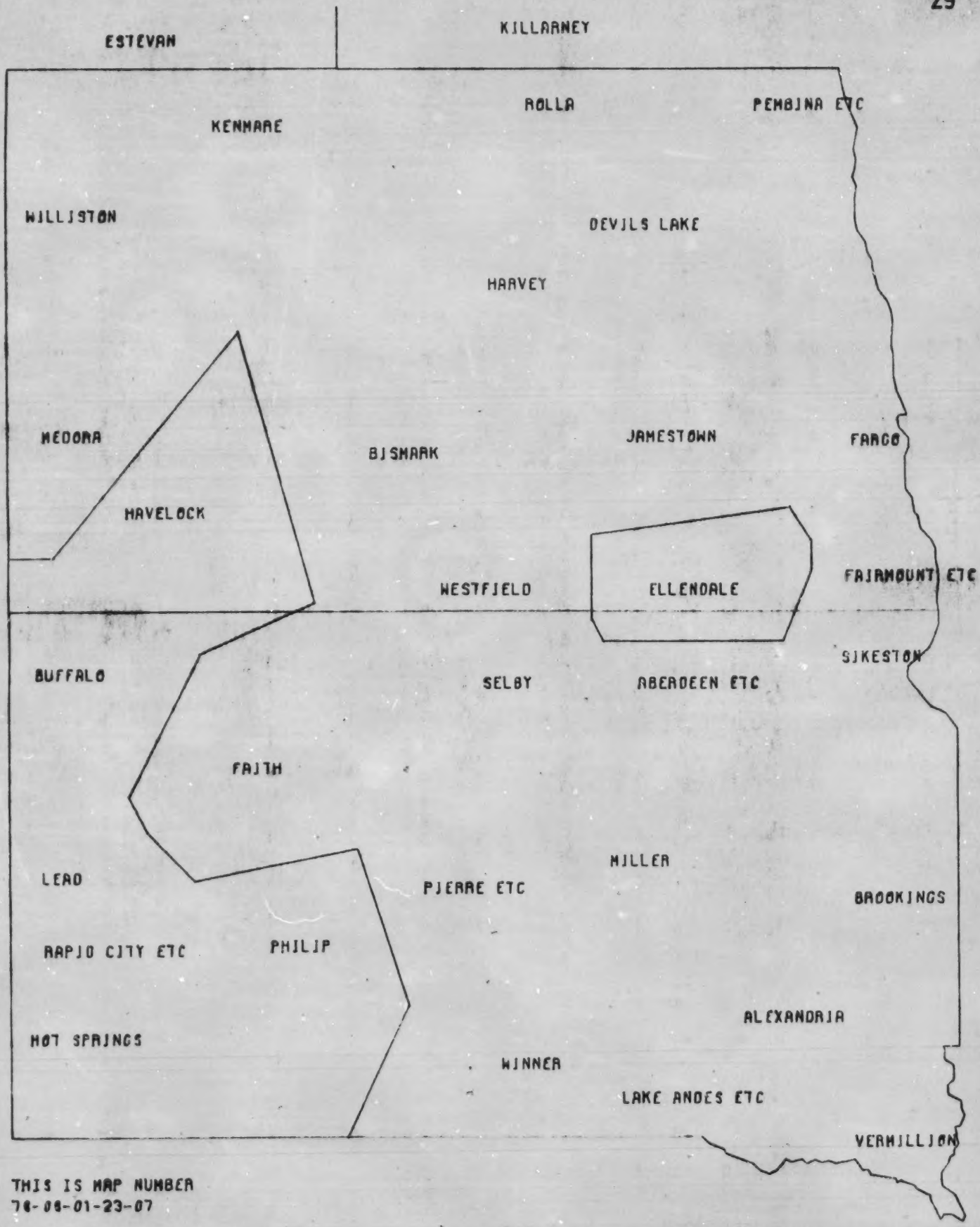
FRONTIER OF 1890?
➤ N

THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ Y

THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

THIS IS MAP NUMBER
78-08-01-23-07



THIS IS MAP NUMBER
76-08-01-23-07

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
-----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ C

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 1310

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM  1310:
        THESE TYPES OCCUR:
(QUAN)
     1    CATTLE RANGE
     1    COMMONS
     3    GRAZING LAND
    54    PASTURE
     9    RANGE
     1    STOCK RANGE
     1    SUMMER RANGE
     1    WINTER RANGE

IS "CATTLE RANGE                                                "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "COMMONS                                                     "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "GRAZING LAND                                                "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "PASTURE                                                     "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "RANGE                                                       "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I

IS "STOCK RANGE                                                 "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "SUMMER RANGE                                                "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "WINTER RANGE                                                "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

THE ISOGLOSS AND LABELS WHICH YOU REQUESTED HAVE BEEN DRAWN.
DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ Y
```

STATE BOUNDARIES?
➤ N

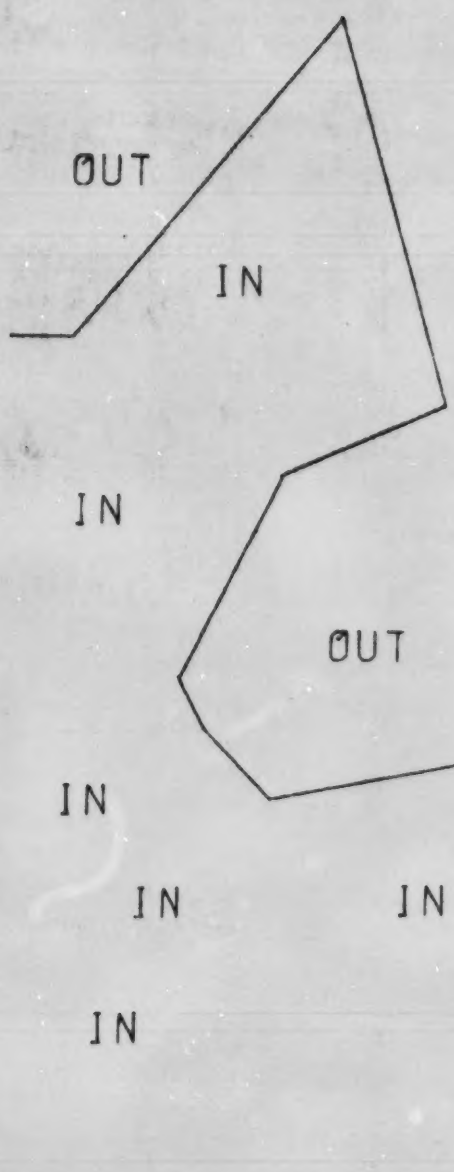
MISSOURI RIVER?
➤ N

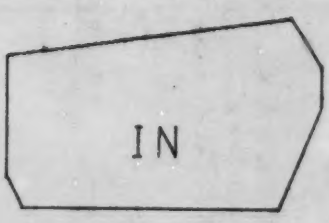
FRONTIER OF 1890?
➤ N

THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ N

THIS IS MAP NUMBER
78-08-01-23-26





OUT
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OUT

THIS IS MAP NUMBER
78-08-01-23-26

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ C

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 2440

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM  2440:
          THESE TYPES OCCUR:
(QUAN)
     1    BAYOU
     1    BRUSH DRAW
     1    BUFFALO WALLOW
     4    CANYON
     1    CEDAR COULEE
    26    COULEE
     4    CREEK
    15    DRAW
     1    DRY COURSE
     4    DRY CREEK
     6    GULCH
     4    GULLY
    12    RAVINE
     1    RIVULET
     1    RUN
     1    SLOUGH
     1    SWALE

IS "BAYOU                                                    "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "BRUSH DRAW                                               "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "BUFFALO WALLOW                                           "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "CANYON                                                   "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "CEDAR COULEE                                             "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I

IS "COULEE                                                   "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I

IS "CREEK                                                    "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "DRAW                                                     "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O
```

```
   IS "DRY COURSE                                                    "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS "DRY CREEK                                                     "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS "GULCH                                                         "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS "GULLY                                                         "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS "RAVINE                                                        "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS "RIVULET                                                       "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS "RUN                                                           "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS "SLOUGH                                                        "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS "SWALE                                                         "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   THE ISOGLOSS AND LABELS WHICH YOU REQUESTED HAVE BEEN DRAWN.
   DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ Y

   STATE BOUNDARIES?
➤ Y

   MISSOURI RIVER?
➤ N

   FRONTIER OF 1890?
➤ N

   THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.
   DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ N

   THIS IS MAP NUMBER
   78-08-01-23-41
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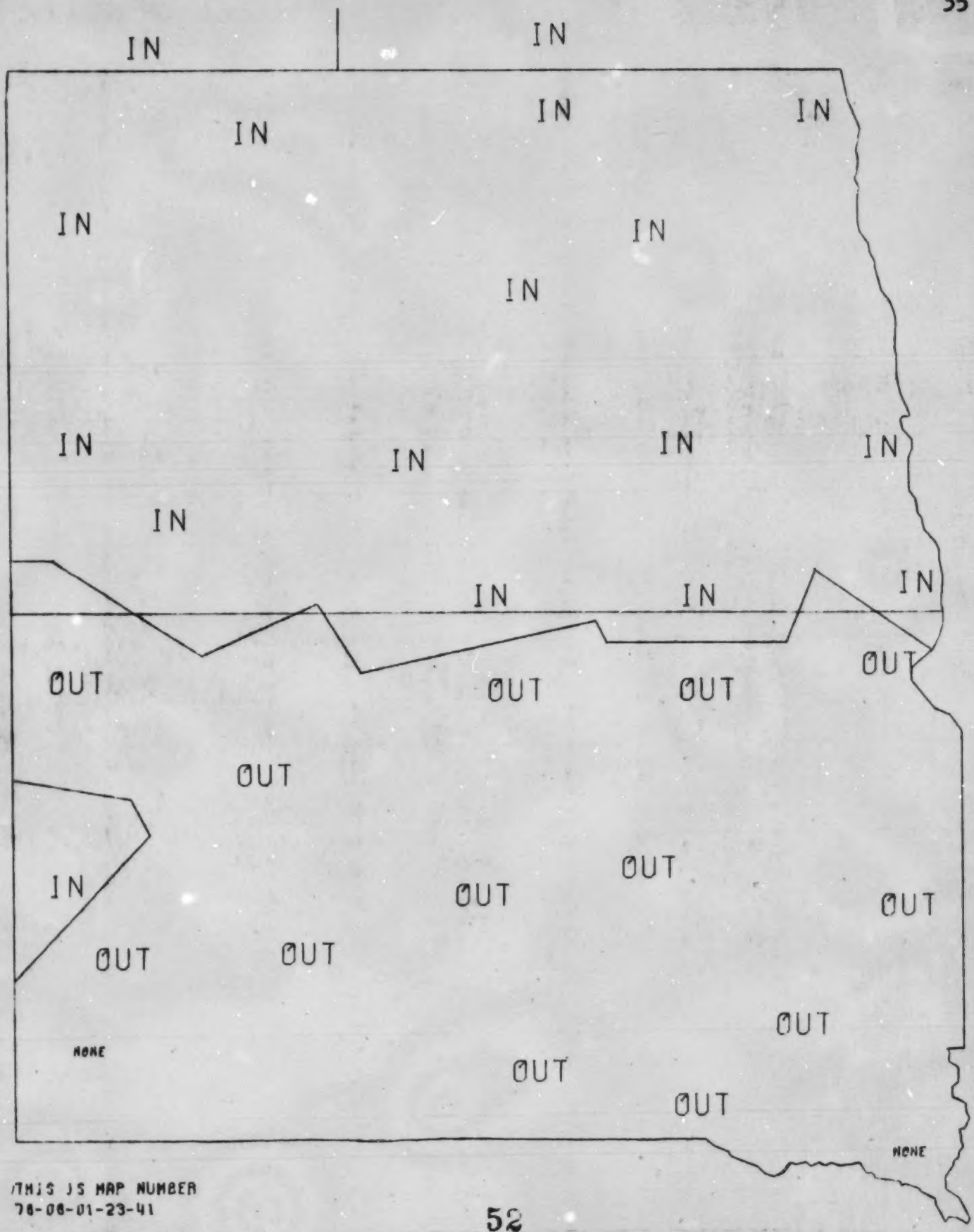

THIS IS MAP NUMBER
78-08-01-23-41

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THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤C

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤6381

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤N

FOR QUESTIONNAIRE ITEM  6381:
          THESE TYPES OCCUR:
(QUAN)
     4    BERM
    29    BOULEVARD
    14    PARKING
     1    PARKING STRIP
     3    PARKWAY

IS *BERM                                                    *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤O

IS *BOULEVARD                                               *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤O

IS *PARKING                                                 *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤I

IS *PARKING STRIP                                           *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤I

IS *PARKWAY                                                 *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤I

THE ISOGLOSS AND LABELS WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤N

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤N


THIS IS MAP NUMBER
78-08-02-10-10
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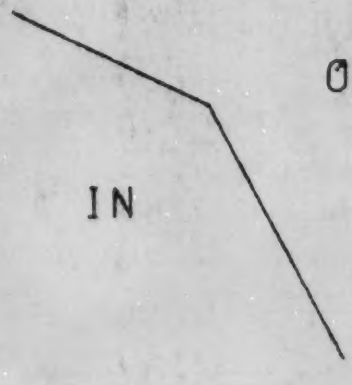


OUT

OUT

IN

NONE

NONE

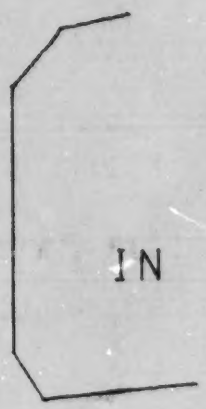
OUT

OUT

OUT

OUT

OUT



IN

OUT

NONE

OUT

OUT

OUT

OUT

IN

OUT

OUT

NONE

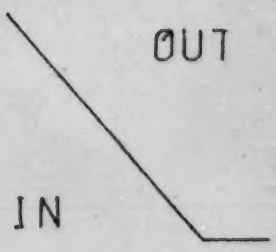
IN

IN

IN

IN

NONE



OUT

IN

NONE

IN

IN

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ C

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 4570

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM  4570:
          THESE TYPES OCCUR:
(QUAN)
     2    ARTIC OWL
     3    BARN OWL
     1    BURROWING OWL
     1    CAT OWL
     2    GRAY OWL
     2    GREAT HORNED OWL
     1    GREY OWL
     6    GROUND OWL
    29    HOOT OWL
     1    HORN OWL
     4    HORNED OWL
     1    MONKEY-FACED OWL
    13    NIGHT OWL
     2    PRAIRIE DOG OWL
     2    PRAIRIE OWL
    10    SCREECH OWL
     1    SNOW OWL
     1    SQUEECH OWL

IS "ARTIC OWL                                                    "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "BARN OWL                                                     "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "BURROWING OWL                                                "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "CAT OWL                                                      "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "GRAY OWL                                                     "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "GREAT HORNED OWL                                             "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "GREY OWL                                                     "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "GROUND OWL                                                   "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I
```

```
IS *HOOT OWL                                                    *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS *HORN OWL                                                    *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS *HORNED OWL                                                  *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS *MONKEY-FACED OWL                                            *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS *NIGHT OWL                                                   *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS *PRAIRIE DOG OWL                                             *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS *PRAIRIE OWL                                                 *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS *SCREECH OWL                                                 *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS *SNOW OWL                                                    *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS *SQUEECH OWL                                                 *
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

THE ISOGLOSS AND LABELS WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ Y

STATE BOUNDARIES?
➤ Y

MISSOURI RIVER?
➤ N

FRONTIER OF 1890?
➤ N

THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ Y

THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

THIS IS MAP NUMBER
78-08-02-17-58
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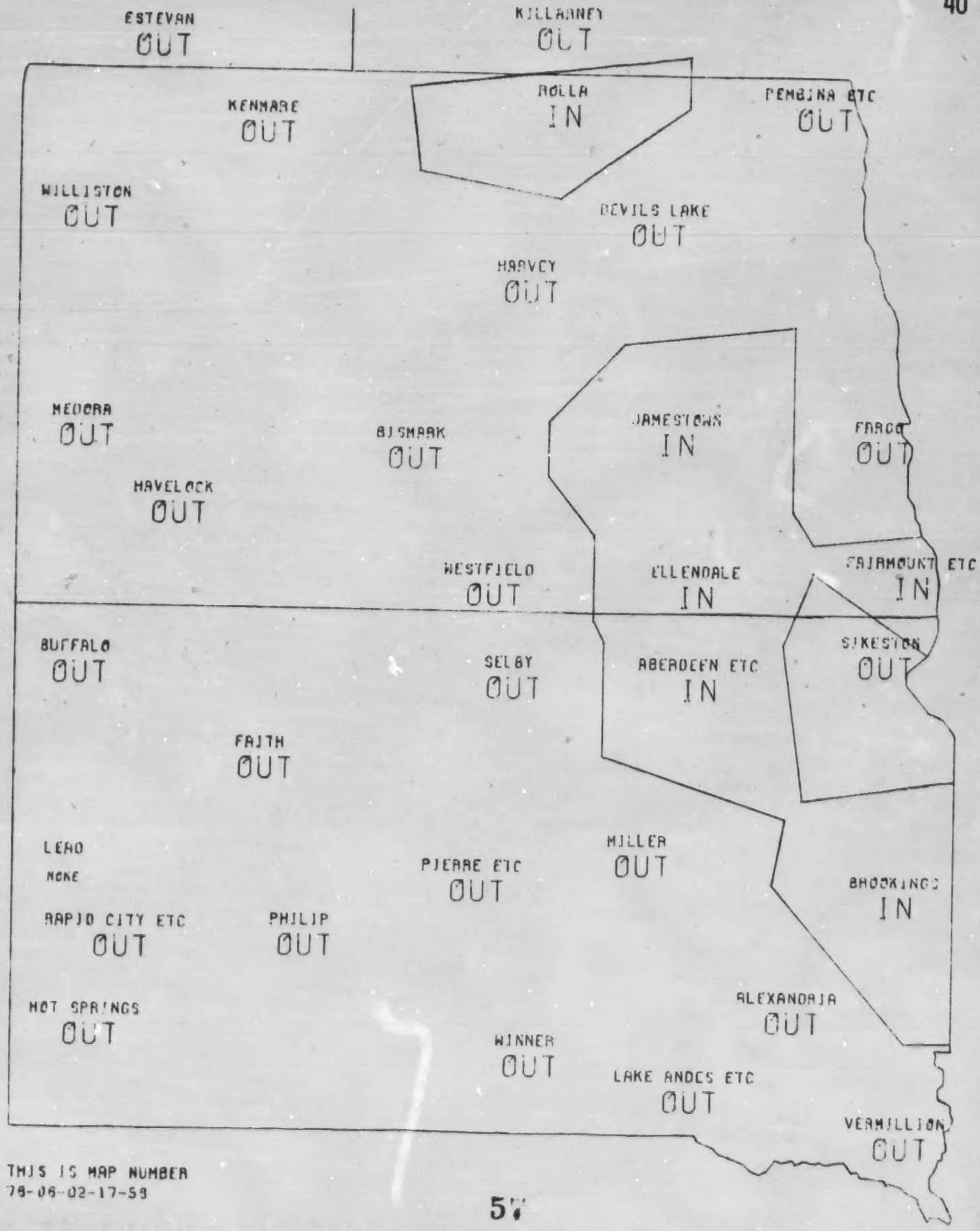


THIS IS MAP NUMBER
78-06-02-17-59

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
-----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ I

WHICH QUESTIONNAIRE ITEMS DO YOU WANT?
(TYPE THEM IN ONE BY ONE: AFTER THE LAST, TYPE "0".
YOU CANNOT HAVE MORE THAN EIGHT.)
➤ 4580
➤ 6381
➤ 0370
➤ 4420
➤ 0

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM  4580:
        THESE TYPES OCCUR:
(QUAN)
     1     AIRPLANE
     1     BEETLE
    15     DARNING NEEDLE
     1     DEVIL FLY
     7     DEVIL*S DARNING NEEDLE
     1     DEVIL*S FLY
    21     DRAGON FLY
     4     MOSQUITO HAWK
     2     NEEDLE
     1     SEWING NEEDLE
     3     SNAKE DOCTOR
     1     SNAKE EATER
     7     SNAKE FEEDER
     1     SNAKE FLY
     1     SPINDLE

IS "AIRPLANE                                                    "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "BEETLE                                                      "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "DARNING NEEDLE                                              "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "DEVIL FLY                                                   "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "DEVIL*S DARNING NEEDLE                                      "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "DEVIL*S FLY                                                 "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

IS "DRAGON FLY                                                  "
INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O
```

```
   IS "MOSQUITO HAWK                                                    "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ 0

   IS "NEEDLE                                                           "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ 0

   IS "SEWING NEEDLE                                                    "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ 0

   IS "SNAKE DOCTOR                                                     "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I

   IS "SNAKE EATER                                                      "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I

   IS "SNAKE FEEDER                                                     "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I

   IS "SNAKE FLY                                                        "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I

   IS "SPINDLE                                                          "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ 0


   FOR QUESTIONNAIRE ITEM  6381:
           THESE TYPES OCCUR:
   (QUAN)
       4     BERM
      29     BOULEVARD
      14     PARKING
       1     PARKING STRIP
       3     PARKWAY

   IS "BERM                                                             "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ 0

   IS "BOULEVARD                                                        "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ 0

   IS "PARKING                                                          "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I

   IS "PARKING STRIP                                                    "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I

   IS "PARKWAY                                                          "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I


   FOR QUESTIONNAIRE ITEM   370:
           THESE TYPES OCCUR:
   (QUAN)
       2     DAWN
       2     DAYBREAK
       3     DAYLIGHT
      31     SUNRISE
      26     SUNUP

   IS "DAWN                                                             "
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ 0
```

```
   IS *DAYBREAK                                                    *
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS *DAYLIGHT                                                    *
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS *SUNRISE                                                     *
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS *SUNUP                                                       *
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I

   FOR QUESTIONNAIRE ITEM 4420:
            THESE TYPES OCCUR:
   (QUAN)
        7     CORN ON THE COB
        2     FIELD CORN
        5     GREEN CORN
       11     ROASTING EARS
        1     SQUAW CORN
       43     SWEET CORN
        1     TABLE CORN
        1     YOUNG FIELD CORN

   IS *CORN ON THE COB                                             *
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS *FIELD CORN                                                  *
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS *GREEN CORN                                                  *
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS *ROASTING EARS                                               *
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ I

   IS *SQUAW CORN                                                  *
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS *SWEET CORN                                                  *
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS *TABLE CORN                                                  *
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   IS *YOUNG FIELD CORN                                            *
   INSIDE (I) OR OUTSIDE (O) THE ISOGLOSS?
➤ O

   THE ISOGLOSSES WHICH YOU REQUESTED HAVE BEEN DRAWN.
   DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ Y

➤ STATE BOUNDARIES?
Y

➤ MISSOURI RIVER?
N
```

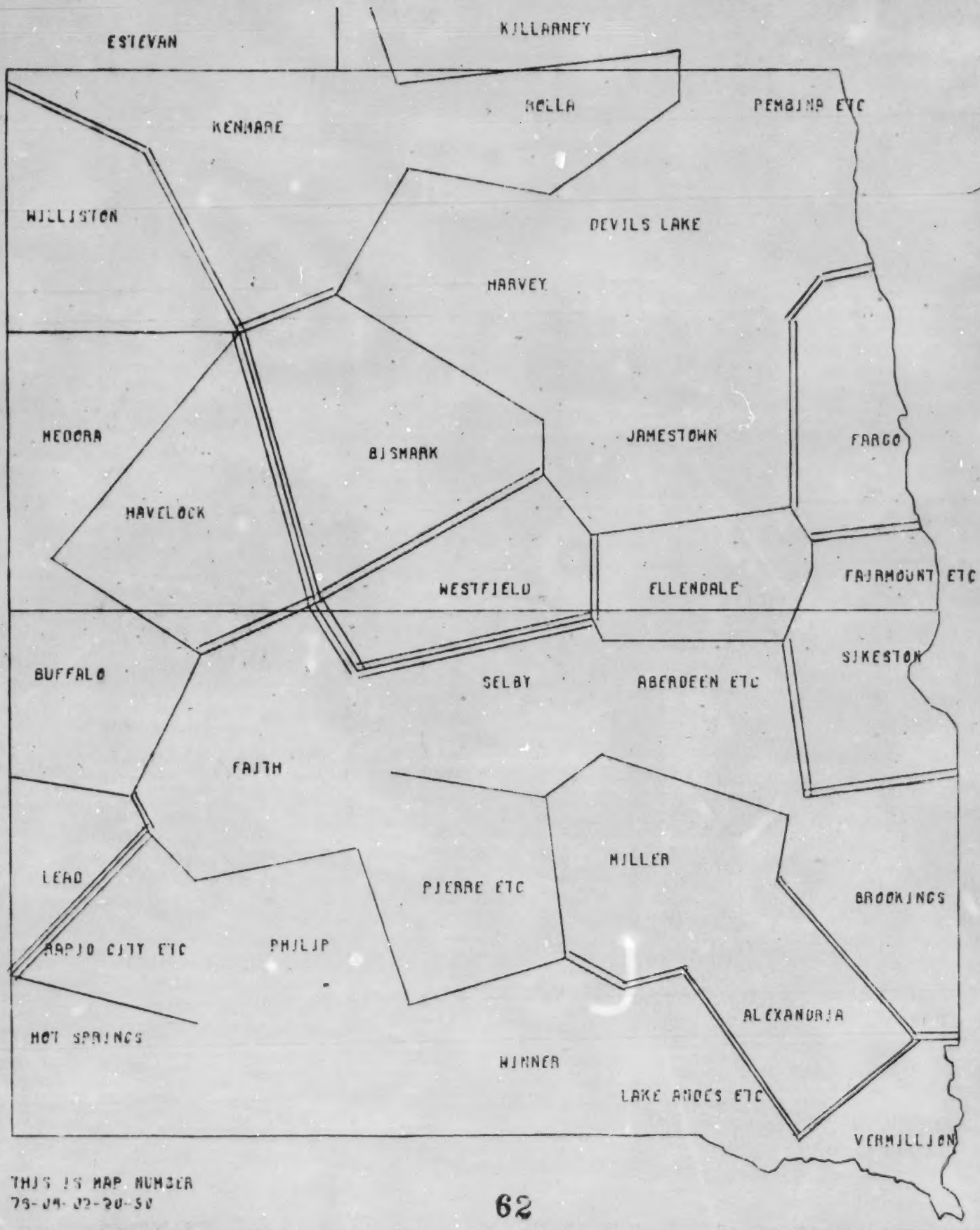
FRONTIER OF 1890?
N

THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
Y

THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

THIS IS MAP NUMBER
78-08-02-20-50



THIS IS MAP NUMBER
78-04-02-20-50

62

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
NORTH AND SOUTH DAKOTA.
-----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ Z

WHICH QUESTIONNAIRE ITEMS DO YOU WANT?
(TYPE THEM IN ONE BY ONE; AFTER THE LAST, TYPE "0".
YOU CANNOT HAVE MORE THAN EIGHT.)
➤ 4580
➤ 6381
➤ 0370
➤ 4420
➤ 0

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM  4580:
          THESE TYPES OCCUR:
(QUAN)
     1     AIRPLANE
     1     BEETLE
    15     DARNING NEEDLE
     1     DEVIL FLY
     7     DEVIL'S DARNING NEEDLE
     1     DEVIL'S FLY
    21     DRAGON FLY
     4     MOSQUITO HAWK
     2     NEEDLE
     1     SEWING NEEDLE
     3     SNAKE DOCTOR
     1     SNAKE EATER
     7     SNAKE FEEDER
     1     SNAKE FLY
     1     SPINDLE

IS "AIRPLANE                                                    "
CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤ N

IS "BEETLE                                                      "
CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤ N

IS "DARNING NEEDLE                                              "
CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤ N

IS "DEVIL FLY                                                   "
CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤ N

IS "DEVIL'S DARNING NEEDLE                                      "
CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤ N

IS "DEVIL'S FLY                                                 "
CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤ N

IS "DRAGON FLY                                                  "
CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤ N
```

```
   IS *MOSQUITO HAWK                                                    *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *NEEDLE                                                           *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *SEWING NEEDLE                                                    *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *SNAKE DOCTOR                                                     *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  Y

   IS *SNAKE EATER                                                      *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  Y

   IS *SNAKE FEEDER
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  Y

   IS *SNAKE FLY                                                        *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  Y

   IS *SPINDLE                                                          *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   FOR QUESTIONNAIRE ITEM  6381:
           THESE TYPES OCCUR:
   (QUAN)
      4     BERM
     29     BOULEVARD
     14     PARKING
      1     PARKING STRIP
      3     PARKWAY

   IS *BERM                                                             *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *BOULEVARD                                                        *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *PARKING                                                          *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  Y

   IS *PARKING STRIP                                                    *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  Y

   IS *PARKWAY                                                          *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  Y

   FOR QUESTIONNAIRE ITEM   370:
           THESE TYPES OCCUR:
   (QUAN)
      2     DAWN
      2     DAYBREAK
      3     DAYLIGHT
     31     SUNRISE
     26     SUNUP

   IS *DAWN                                                             *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N
```

```
   IS *DAYBREAK                                                    *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *DAYLIGHT                                                    *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *SUNRISE                                                     *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *SUNUP                                                       *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  Y

   FOR QUESTIONNAIRE ITEM  4420:
            THESE TYPES OCCUR:
   (QUAN)
       7    CORN ON THE COB
       2    FIELD CORN
       5    GREEN CORN
      11    ROASTING EARS
       1    SQUAW CORN
      43    SWEET CORN
       1    TABLE CORN
       1    YOUNG FIELD CORN

   IS *CORN ON THE COB                                             *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *FIELD CORN                                                  *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *GREEN CORN                                                  *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *ROASTING EARS                                               *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  Y

   IS *SQUAW CORN                                                  *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *SWEET CORN                                                  *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *TABLE CORN                                                  *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   IS *YOUNG FIELD CORN                                            *
   CHARACTERISTIC OF THE PARTICIPATION ZONE?
➤  N

   THE PARTICIPATION ZONE WHICH YOU REQUESTED HAS BEEN DRAWN.

   DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤  Y

   STATE BOUNDARIES?
➤  Y

   MISSOURI RIVER?
➤  N
```

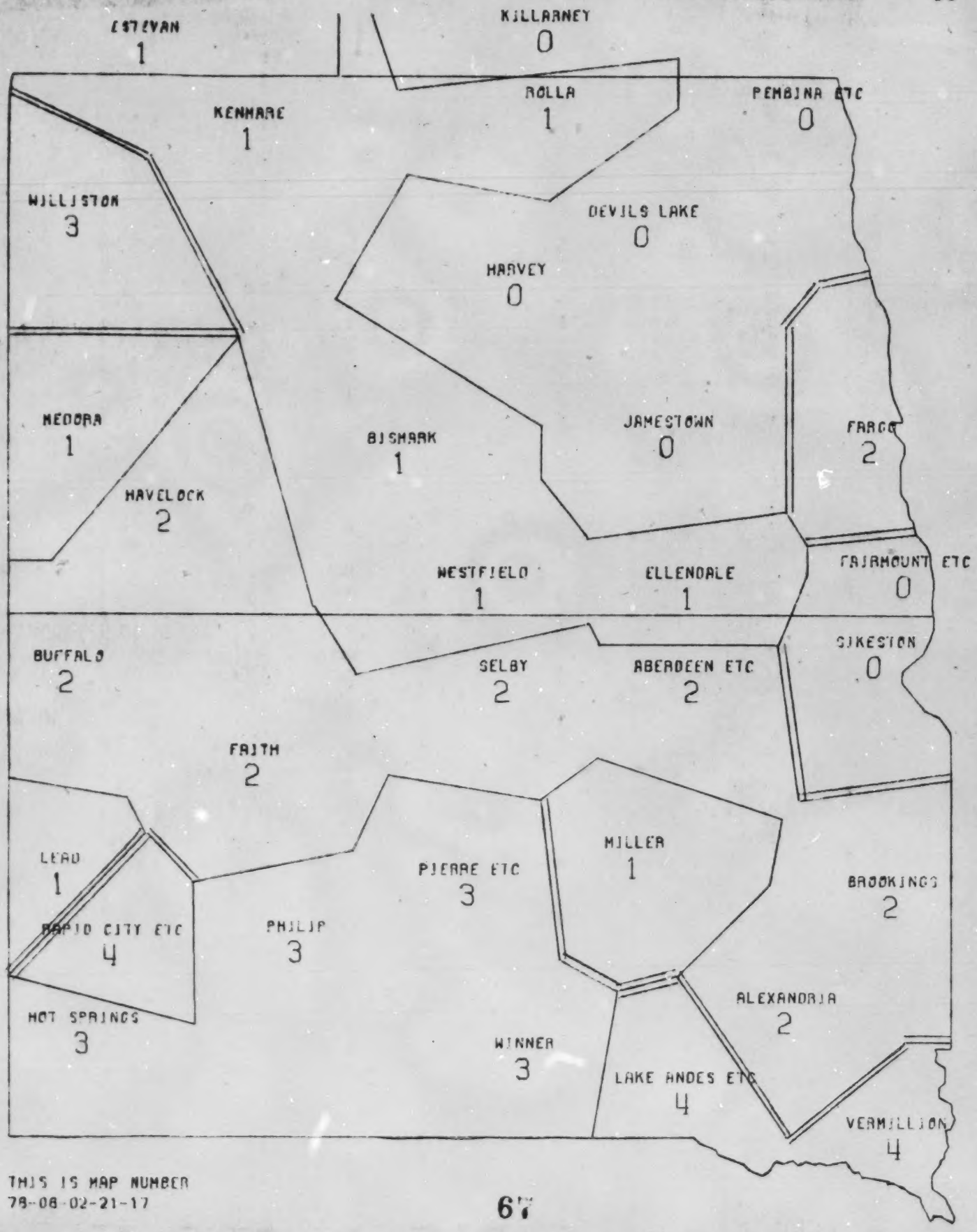
FRONTIER OF 1890?
➤ N

THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ Y

THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

THIS IS MAP NUMBER
78-08-02-21-17



THIS IS MAP NUMBER
78-08-02-21-17

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
-----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤ Y

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 1410

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM  1410:
          THESE TYPES OCCUR:
(QUAN)
  132     BUCKET
    1     BUTTER TUB
    1     CANDY BUCKET
    3     CANDY PAIL
    6     MILK BUCKET
    6     MILK PAIL
    1     OAK BUCKET
   63     PAIL
    1     SCRUB PAIL
    4     WATER BUCKET
    5     WATER PAIL
    1     WELL BUCKET
    2     WOOD BUCKET
    2     WOOD PAIL
   18     WOODEN BUCKET
    1     WOODEN CANDY PAIL
   38     WOODEN PAIL
    1     WOODEN WATER PAIL

THE PERCENTAGES CAN SHOW THE LOCATIONS OF 1, 2, 3, OR 4
  GROUPS OF RESPONSES.  (YOU MAY ALSO HAVE RESPONSES THAT
  ARE NOT INCLUDED IN ANY GROUP.)
HOW MANY GROUPS OF RESPONSES DO YOU WANT?
➤ 3
(IF A RESPONSE DOES NOT BELONG TO ANY GROUP, REPLY ZERO.)

WHICH GROUP INCLUDES
*BUCKET                                                    "?
➤ 1

WHICH GROUP INCLUDES
*BUTTER TUB                                                "?
➤ 0

WHICH GROUP INCLUDES
*CANDY BUCKET                                              "?
➤ 0

WHICH GROUP INCLUDES
*CANDY PAIL                                                "?
➤ 0

WHICH GROUP INCLUDES
*MILK BUCKET                                               "?
➤ 0

WHICH GROUP INCLUDES
*MILK PAIL                                                 "?
➤ 0
```

```
   WHICH GROUP INCLUDES
   *OAK BUCKET                                                    *?
➤  2

   WHICH GROUP INCLUDES
   *PAIL                                                          *?
➤  3

   WHICH GROUP INCLUDES
   *SCRUB PAIL                                                    *?
➤  0

   WHICH GROUP INCLUDES
   *WATER BUCKET                                                  *?
➤  0

   WHICH GROUP INCLUDES
   *WATER PAIL                                                    *?
➤  0

   WHICH GROUP INCLUDES
   *WELL BUCKET                                                   *?
➤  0

   WHICH GROUP INCLUDES
   *WOOD BUCKET                                                   *?
➤  2

   WHICH GROUP INCLUDES
   *WOOD PAIL                                                     *?
➤  2

   WHICH GROUP INCLUDES
   *WOODEN BUCKET                                                 *?
➤  2

   WHICH GROUP INCLUDES
   *WOODEN CANDY PAIL                                             *?
➤  2

   WHICH GROUP INCLUDES
   *WOODEN PAIL                                                   *?
➤  2

   WHICH GROUP INCLUDES
   *WOODEN WATER PAIL                                             *?
➤  2

   THE PERCENTAGES WHICH YOU REQUESTED HAVE BEEN DRAWN.

   DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤  N

   DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤  Y

   THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

   THIS IS MAP NUMBER
   78-07-29-23-19
```

NORTH DAKOTA
<1> 42%
<2> 62%
<3> 15%

MINNESOTA
<1> 68%
<2> 45%
<3> 29%

SOUTH DAKOTA
<1> 75%
<2> 25%
<3> 25%

IOWA
<1> 56%
<2> 6%
<3> 44%

NEBRASKA
<1> 73%
<2> 22%
<3> 27%

THIS IS MAP NUMBER
78-07-29-23-19

TOTAL
<1> 63%
<2> 30%
<3> 30%

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
------------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤ Y

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 1410

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ R

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM  1410:
          THESE TYPES OCCUR:
(QUAN)
  132     BUCKET
    1     BUTTER TUB
    1     CANDY BUCKET
    3     CANDY PAIL
    6     MILK BUCKET
    6     MILK PAIL
    1     OAK BUCKET
   63     PAIL
    1     SCRUB PAIL
    4     WATER BUCKET
    5     WATER PAIL
    1     WELL BUCKET
    2     WOOD BUCKET
    2     WOOD PAIL
   18     WOODEN BUCKET
    1     WOODEN CANDY PAIL
   38     WOODEN PAIL
    1     WOODEN WATER PAIL

THE PERCENTAGES CAN SHOW T
  GROUPS OF RESPONSES
  ARE NOT INCLUDED
HOW MANY GROU
➤ 3
(IF
```

SAME CONVERSATION AS FOR MAP NUMBER 78-07-29-23-19

ON PAGES 51 & 52

```
                                                    "?

          ... YOU REQUESTED HAVE BEEN DRAWN.

      ...NT TO DRAW ANY SPECIAL LINES?

PLEASE REPLY "Y" OR "N".
➤ N

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ Y

THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

THIS IS MAP NUMBER
78-07-30-14-44
```

NORTH DAKOTA
<1> 23%
<2> 50%
<3> 15%

MINNESOTA
<1> 38%
<2> 37%
<3> 25%

SOUTH DAKOTA
<1> 54%
<2> 21%
<3> 25%

IOWA
<1> 50%
<2> 6%
<3> 35%

NEBRASKA
<1> 70%
<2> 22%
<3> 24%

THIS IS MAP NUMBER
78-07-30-14-44

TOTAL
<1> 47%
<2> 26%
<3> 26%

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
-------------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤ Y

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 1410

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ R

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ Y
WHICH TYPE?
➤ I

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM  1410:
          THESE TYPES OCCUR:
(QUAN)
  132     BUCKET
    1     BUTTER TUB
    1     CANDY BUCKET
    3     CANDY PAIL
    6     MILK BUC-
    6     MILK P
    1     OA-
   63

SAME CONVERSATION AS FOR MAP NUMBER 78-07-29-23-19

ON PAGES 51 & 52

                                                    "?

          -CLUDES
        -AIER PAIL                                  "?

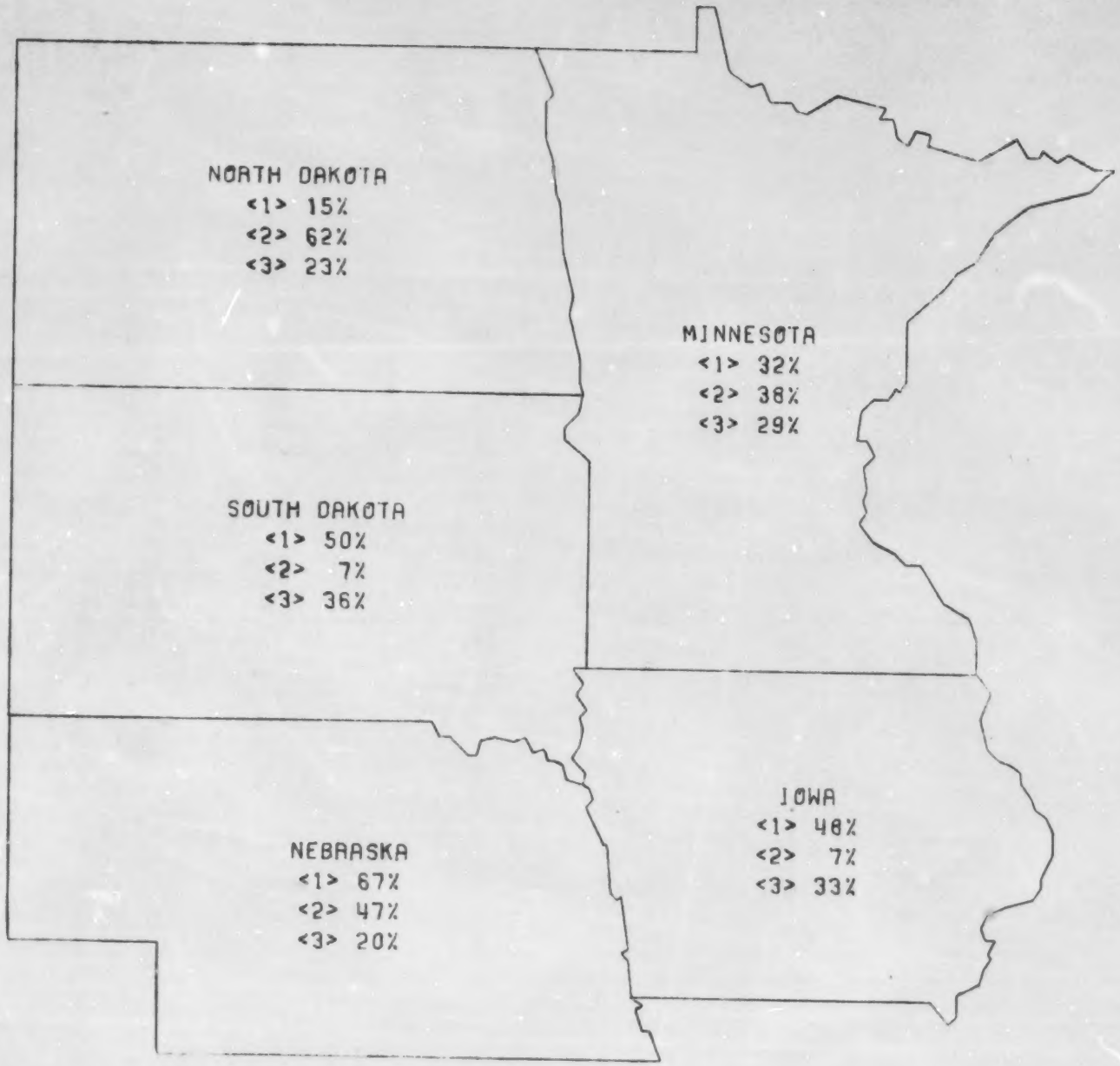
THE PERCENTAGES WHICH YOU REQUESTED HAVE BEEN DRAWN.
DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ Y

STATE BOUNDARIES?
➤ Y

THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.
DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ Y

THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

THIS IS MAP NUMBER
78-07-30-11-54
```



THIS IS MAP NUMBER
78-07-30-11-54

TOTAL
<1> 42%
<2> 30%
<3> 29%

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
------------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤ Y

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 1410

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ R

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ Y
WHICH TYPE?
➤ II

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM  1410:
          THESE TYPES OCCUR:
(QUAN)
  132     BUCKET
    1     BUTTER TUB
    1     CANDY BUCKET
    3     CANDY PAIL
    6     MILK BUCKET
    6     MILK PAIL
    1     OAK BUCKET
   63     PAIL
    1     SCRUB PAIL
    4     WATER BUCKET
    5     WATER PAIL
    1     WELL BUCKET
    2     WOOD BUCKET
    2     WOOD PAIL
   18     WOODEN BUCKET
    1     WOODEN CAND
   38     WOODEN
    1     WOO

THE

SAME CONVERSATION AS FOR MAP NUMBER 78-07-29-23-19

ON PAGES 51 & 52

                                    BEEN DRAWN.

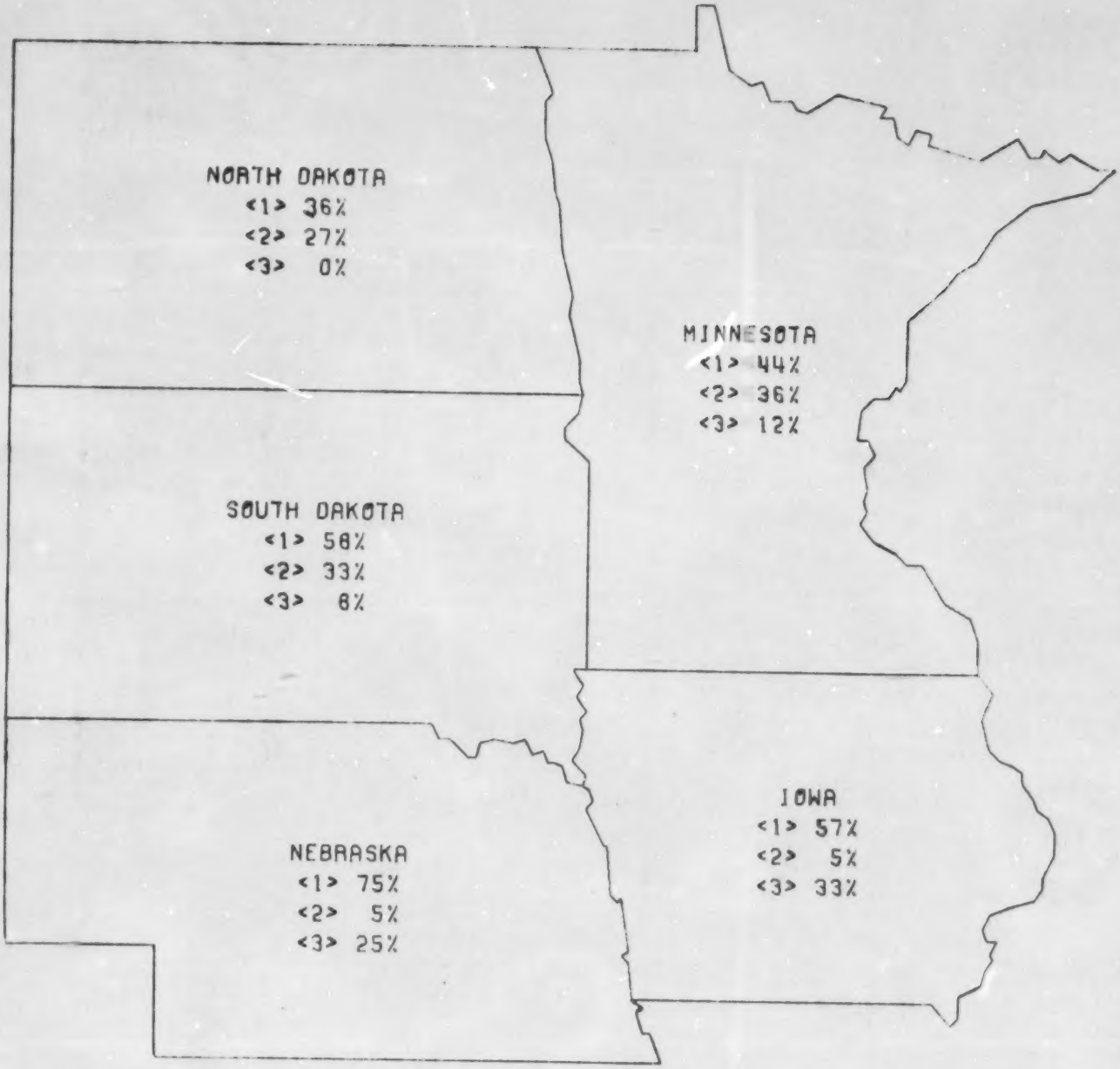
                                LINES?


    SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ Y

THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

THIS IS MAP NUMBER
78-07-30-11-59
```



THIS IS MAP NUMBER
78-07-30-11-59

TOTAL
<1> 55%
<2> 20%
<3> 18%

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
-------------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤ Y

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 1410

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ R

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ Y
WHICH SEX?
➤ F

FOR QUESTIONNAIRE ITEM  1410:
          THESE TYPES OCCUR:
(QUAN)
  132     BUCKET
    1     BUTTER TUB
    1     CANDY BUCKET
    3     CANDY PAIL
    6     MILK BUCKET
    6     MILK PA
    1     OA
   67
```

SAME CONVERSATION AS FOR MAP NUMBER 78-07-29-23-19

ON PAGES 51 & 52

```
                                                    "?

                                                    "?

          _ WHICH YOU REQUESTED HAVE BEEN DRAWN.
     _ WANT TO DRAW ANY SPECIAL LINES?

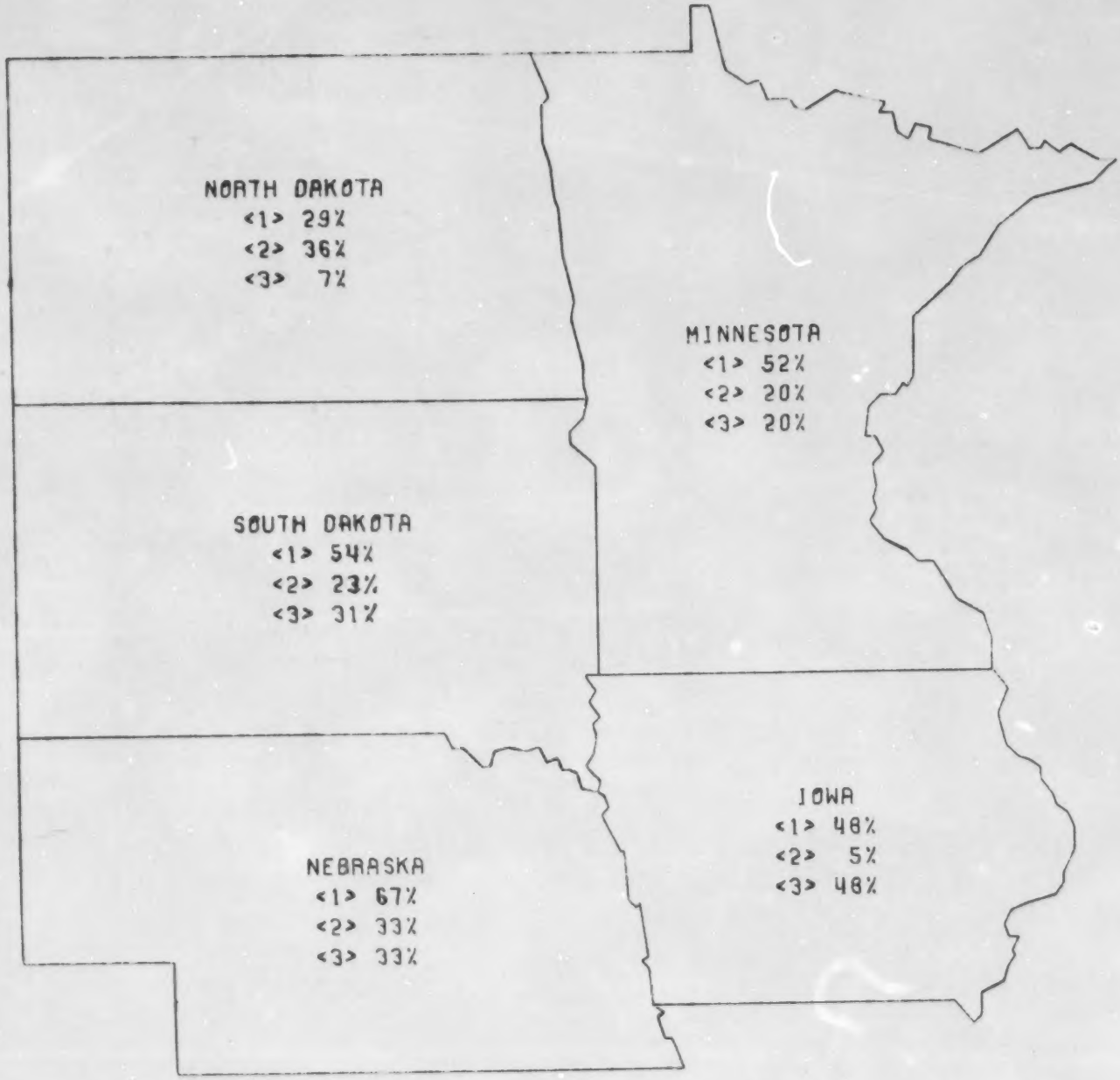
STATE BOUNDARIES?
➤ Y

THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ Y

THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

THIS IS MAP NUMBER
78-07-30-12-16
```



THIS IS MAP NUMBER
78-07-30-12-16

TOTAL
<1> 50%
<2> 22%
<3> 28%

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
-------------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤Y

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤1410

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤N

FOR QUESTIONNAIRE ITEM  1410:
          THESE TYPES OCCUR:
(QUAN)
  132     BUCKET
    1     BUTTER TUB
    1     CANDY BUCKET
    3     CANDY PAIL
    6     MILK BUCKET
    6     MILK PAIL
    1     OAK BUCKET
   63     PAIL
    1     SCRUB PAIL
    4     WATER BUCKET
    5     WATER PAIL
    1     WELL BUCKET
    2     WOOD BUCKET
    2     WOOD PAIL
   18     WOODEN BUCKET
    1     WOODEN CANDY PAIL
   38     WOODEN PAIL
    1     WOODEN WATER PAIL

THE PERCENTAGES CAN SHOW THE LOCATIONS OF 1, 2, 3, OR 4
  GROUPS OF RESPONSES.  (YOU MAY ALSO HAVE RESPONSES THAT
  ARE NOT INCLUDED IN ANY GROUP.)
HOW MANY GROUPS OF RESPONSES DO YOU WANT?
➤4
(IF A RESPONSE DOES NOT BELONG TO ANY GROUP, REPLY ZERO.)

WHICH GROUP INCLUDES
"BUCKET                                                    "?
➤1

WHICH GROUP INCLUDES
"BUTTER TUB                                                "?
➤0

WHICH GROUP INCLUDES
"CANDY BUCKET                                              "?
➤0

WHICH GROUP INCLUDES
"CANDY PAIL                                                "?
➤0

WHICH GROUP INCLUDES
"MILK BUCKET                                               "?
➤0

WHICH GROUP INCLUDES
"MILK PAIL                                                 "?
➤0
```

```
   WHICH GROUP INCLUDES
   *OAK BUCKET                                                    *?
➤ 0

   WHICH GROUP INCLUDES
   *PAIL                                                          *?
➤ 2

   WHICH GROUP INCLUDES
   *SCRUB PAIL                                                    *?
➤ 0

   WHICH GROUP INCLUDES
   *WATER BUCKET                                                  *?
➤ 0

   WHICH GROUP INCLUDES
   *WATER PAIL                                                    *?
➤ 0

   WHICH GROUP INCLUDES
   *WELL BUCKET                                                   *?
➤ 0

   WHICH GROUP INCLUDES
   *WOOD BUCKET                                                   *?
➤ 3

   WHICH GROUP INCLUDES
   *WOOD PAIL                                                     *?
➤ 4

   WHICH GROUP INCLUDES
   *WOODEN BUCKET                                                 *?
➤ 3

   WHICH GROUP INCLUDES
   *WOODEN CANDY PAIL                                             *?
➤ 0

   WHICH GROUP INCLUDES
   *WOODEN PAIL                                                   *?
➤ 4

   WHICH GROUP INCLUDES
   *WOODEN WATER PAIL                                             *?
➤ 0

   THE PERCENTAGES WHICH YOU REQUESTED HAVE BEEN DRAWN.

   DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ N

   DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ Y

   THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

   THIS IS MAP NUMBER
   78-07-29-23-12
```

NORTH DAKOTA
<1> 42%
<2> 15%
<3> 15%
<4> 42%

MINNESOTA
<1> 68%
<2> 29%
<3> 11%
<4> 31%

SOUTH DAKOTA
<1> 75%
<2> 25%
<3> 14%
<4> 11%

IOWA
<1> 56%
<2> 44%
<3> 0%
<4> 6%

NEBRASKA
<1> 73%
<2> 27%
<3> 14%
<4> 8%

THIS IS MAP NUMBER
78-07-29-23-12

TOTAL
<1> 63%
<2> 30%
<3> 10%
<4> 19%

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
------------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤ Y

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 0370

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ N

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM   370:
          THESE TYPES OCCUR:
(QUAN)
     1    BREAK OF DAY
     1    CRACK OF DAWN
     7    DAWN
     1    DAWN OF DAY
     6    DAYBREAK
     7    DAYLIGHT
   143    SUNRISE
    74    SUNUP
     1    THE SUN

THE PERCENTAGES CAN SHOW THE LOCATIONS OF 1, 2, 3, OR 4
  GROUPS OF RESPONSES.  (YOU MAY ALSO HAVE RESPONSES THAT
  ARE NOT INCLUDED IN ANY GROUP.)
HOW MANY GROUPS OF RESPONSES DO YOU WANT?
➤ 3
(IF A RESPONSE DOES NOT BELONG TO ANY GROUP, REPLY ZERO.)

WHICH GROUP INCLUDES
*BREAK OF DAY                                              *?
➤ 0

WHICH GROUP INCLUDES
*CRACK OF DAWN                                             *?
➤ 3

WHICH GROUP INCLUDES
*DAWN                                                      *?
➤ 3

WHICH GROUP INCLUDES
*DAWN OF DAY                                               *?
➤ 3

WHICH GROUP INCLUDES
*DAYBREAK                                                  *?
➤ 0

WHICH GROUP INCLUDES
*DAYLIGHT                                                  *?
➤ 0

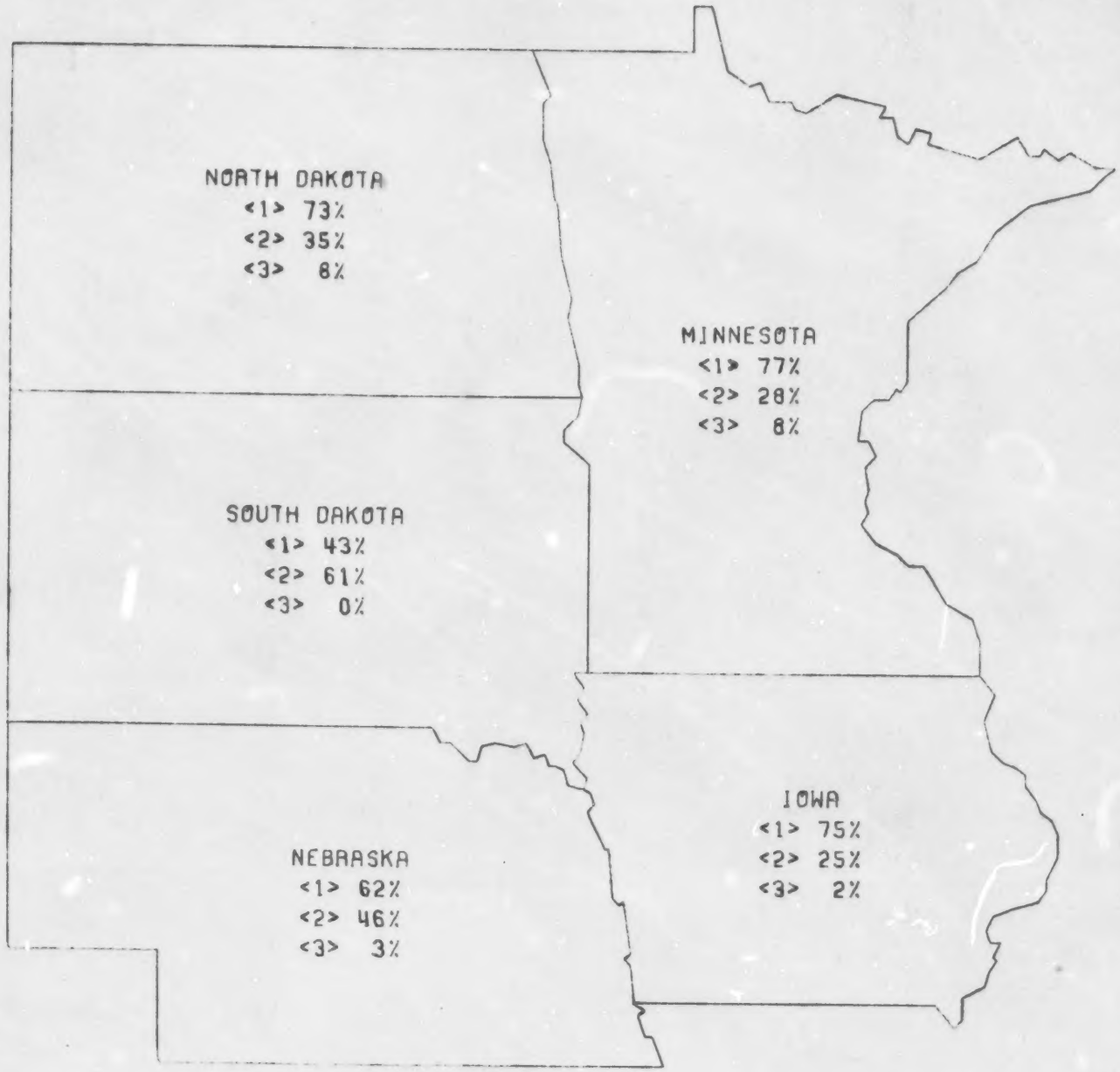
WHICH GROUP INCLUDES
*SUNRISE                                                   *?
➤ 1

WHICH GROUP INCLUDES
*SUNUP                                                     *?
➤ 2
```

```
WHICH GROUP INCLUDES
"THE SUN                                                    "?
➤ 0

THE PERCENTAGES WHICH YOU REQUESTED HAVE BEEN DRAWN.
DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ Y
STATE BOUNDARIES?
➤ Y
THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.
DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ Y
THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

THIS IS MAP NUMBER
78-07-29-22-50
```



THIS IS MAP NUMBER
78-07-29-22-50

TOTAL
<1> 69%
<2> 36%
<3> 4%

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
------------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤ Y

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 0370

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE TYPE?
➤ Y
WHICH TYPE?
➤ I

DO YOU WANT TO LIMIT INFORMANTS TO ONLY ONE SEX?
➤ N

FOR QUESTIONNAIRE ITEM   370:
          THESE TYPES OCCUR:
(QUAN)
     1    BREAK OF DAY
     1    CRACK OF DAWN
     7    DAWN
     1    DAWN OF DAY
     6    DAYBREAK
     7    DAYLIGHT
   143    SUNRISE
    74    SUNUP
     1    THE SUN

THE PERCENTAGE
  GROUPS
  AR-
```

SAME CONVERSATION AS FOR MAP NUMBER 78-07-29-22-50

ON PAGES 65 & 66

```
                                                    "?

          ..AGES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT TO DRAW ANY SPECIAL LINES?
➤ Y

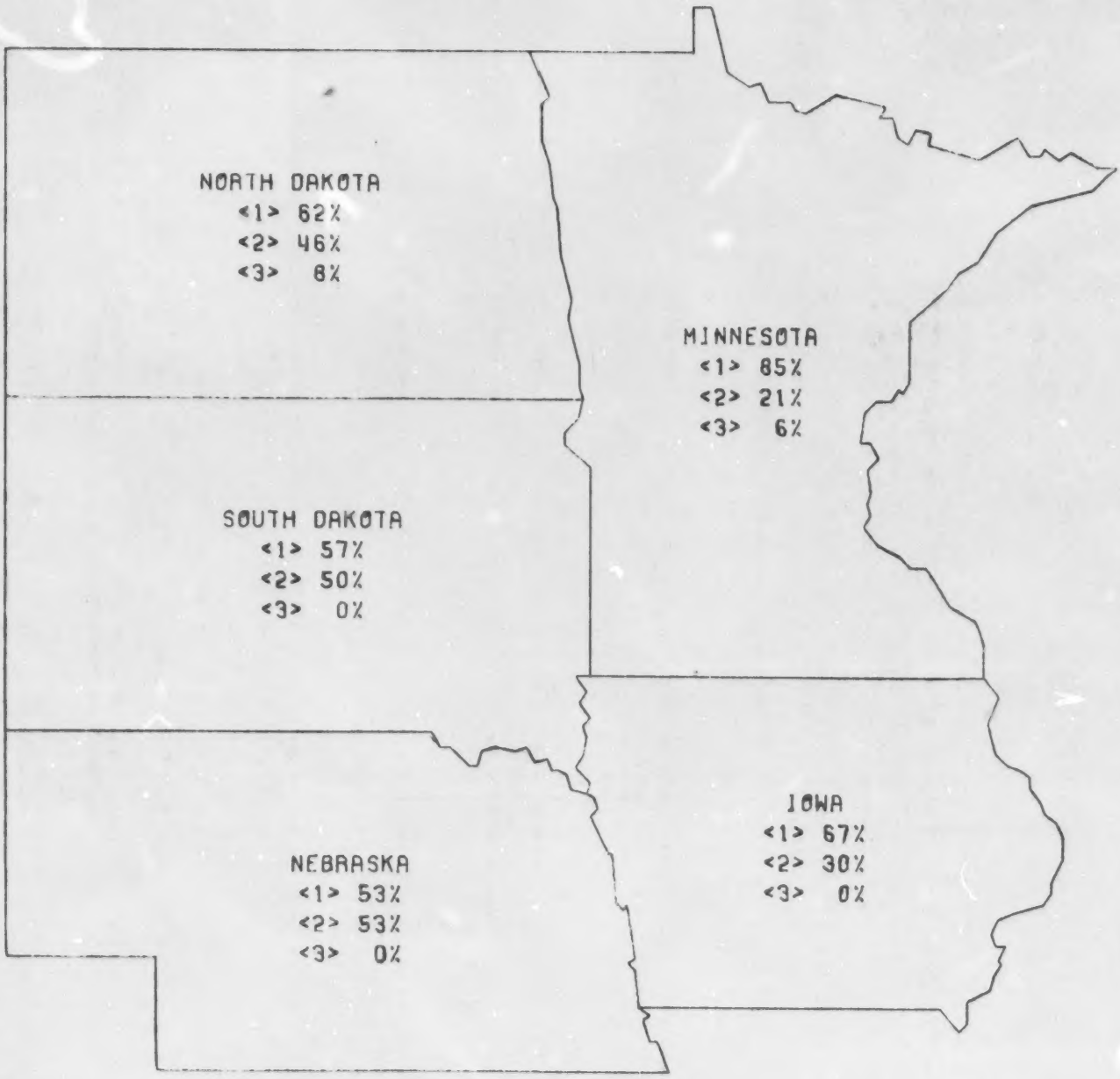
STATE BOUNDARIES?
➤ Y

THE SPECIAL LINES WHICH YOU REQUESTED HAVE BEEN DRAWN.

DO YOU WANT LABELS FOR THE INFORMANTS' LOCATIONS?
➤ Y

THE LABELS WHICH YOU REQUESTED HAVE BEEN WRITTEN.

THIS IS MAP NUMBER
78-07-29-23-04
```



THIS IS MAP NUMBER
78-07-29-23-04

TOTAL
<1> 69%
<2> 35%
<3> 3%

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
-----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤ N

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 0370

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO TYPE?
➤ Y

DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO SEX?
➤ Y

FOR QUESTIONNAIRE ITEM   370:
          THESE TYPES OCCUR:
(QUAN)
     1    BREAK OF DAY
     1    CRACK OF DAWN
     7    DAWN
     1    DAWN OF DAY
     6    DAYBREAK
     7    DAYLIGHT
   143    SUNRISE
    74    SUNUP
     1    THE SUN

THE PERCENTAGES CAN SHOW THE LOCATIONS OF 1, 2, 3, OR 4
  GROUPS OF RESPONSES.  (YOU MAY ALSO HAVE RESPONSES THAT
  ARE NOT INCLUDED IN ANY GROUP.)
HOW MANY GROUPS OF RESPONSES DO YOU WANT?
➤ 3
(IF A RESPONSE DOES NOT BELONG TO ANY GROUP, REPLY ZERO.)

WHICH GROUP INCLUDES
*BREAK OF DAY                                              *?
➤ 0

WHICH GROUP INCLUDES
*CRACK OF DAWN                                             *?
➤ 3

WHICH GROUP INCLUDES
*DAWN                                                      *?
➤ 3

WHICH GROUP INCLUDES
*DAWN OF DAY                                               *?
➤ 3

WHICH GROUP INCLUDES
*DAYBREAK                                                  *?
➤ 0

WHICH GROUP INCLUDES
*DAYLIGHT                                                  *?
➤ 0

WHICH GROUP INCLUDES
*SUNRISE                                                   *?
➤ 1

WHICH GROUP INCLUDES
*SUNUP                                                     *?
➤ 2
```

```
WHICH GROUP INCLUDES
"THE SUN                                                    "?
➔0
```

TYPE I MALE	TYPE II MALE	TYPE III MALE	ALL MALE
<1> 69%	<1> 65%	<1> 60%	<1> 67%
<2> 39%	<2> 37%	<2> 40%	<2> 38%
<3> 3%	<3> 5%	<3> 10%	<3> 4%

TYPE I FEMALE	TYPE II FEMALE	TYPE III FEMALE	ALL FEMALE
<1> 69%	<1> 70%	<1>100%	<1> 72%
<2> 28%	<2> 39%	<2> 0%	<2> 32%
<3> 3%	<3> 4%	<3> 17%	<3> 5%

TYPE I ALL	TYPE II ALL	TYPE III ALL	ALL ALL
<1> 69%	<1> 67%	<1> 75%	<1> 69%
<2> 35%	<2> 38%	<2> 25%	<2> 36%
<3> 3%	<3> 4%	<3> 13%	<3> 4%

```
THESE ARE THE PERCENTAGES WHICH YOU REQUESTED;
NO MAP WILL BE DRAWN.

THIS IS CALCULATION NUMBER
78-07-29-20-51
```

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
------------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤ N

➤ WHICH QUESTIONNAIRE ITEM DO YOU WANT?
0370

➤ DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
A

➤ DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO TYPE?
Y

➤ DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO SEX?
N

FOR QUESTIONNAIRE ITEM   370:
          THESE TYPES OCCUR:
(QUAN)
     1    BREAK OF DAY
     1    CRACK OF DAWN
     7    DAWN
     1    DAWN OF DAY
     6    DAYBREAK
     7    DAYLIGHT
   143    SUNRISE
    74    SUNUP
     1    THE SUN

THE PERCENTAGES C
  GROUPS OF RE
  ARE NOT
HOW MA
3

                SAME CONVERSATION AS FOR MAP NUMBER 78-07-29-20-51

                ON PAGES 70 & 71

                                                              "?

                                                              "?

                                                              "?

"HICH GROUP INCLUDES
"THE SUN                                                      "?
➤ 0


     TYPE I          TYPE II         TYPE III        ALL
     <1> 69%         <1> 67%         <1> 75%         <1> 69%
     <2> 35%         <2> 38%         <2> 25%         <2> 36%
     <3>  3%         <3>  4%         <3> 13%         <3>  4%

THESE ARE THE PERCENTAGES WHICH YOU REQUESTED:
NO MAP WILL BE DRAWN.

THIS IS CALCULATION NUMBER
78-07-29-21-08
```

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
-----------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤ P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤ N

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤ 0370

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤ A

DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO TYPE?
➤ N

DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO SEX?
➤ Y

FOR QUESTIONNAIRE ITEM   370:
          THESE TYPES OCCUR:
(QUAN)
     1    BREAK OF DAY
     1    CRACK OF DAWN
     7    DAWN
     .
```

SAME CONVERSATION AS FOR MAP NUMBER 78-07-29-20-51

ON PAGES 70 & 71

```
                                                              "?

WHICH GROUP INCLUDES
"THE SUN                                                      "?
➤ 0


     MALE
     <1>  67%
     <2>  38%
     <3>   4%

     FEMALE
     <1>  72%
     <2>  32%
     <3>   5%

     ALL
     <1>  69%
     <2>  36%
     <3>   4%

THESE ARE THE PERCENTAGES WHICH YOU REQUESTED;
NO MAP WILL BE DRAWN.

THIS IS CALCULATION NUMBER
78-07-29-21-13
```

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
------------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤N

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤0370

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤A

DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO TYPE?
➤N

DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO SEX?
➤N

FOR QUESTIONNAIRE ITEM   370:
          THESE TYPES OCCUR:
(QUAN)
     1    BREAK OF DAY
     1    CRACK OF DAWN
     7    DAWN
     1    DAWN OF DAY
     6    DAYBREAK
     7    DAYLIGHT
   143    SUNRISE
    74    SUNUP
     1    T...
...

SAME CONVERSATION AS FOR MAP NUMBER 78-07-29-20-51

ON PAGES 70 & 71

                                                              "?

                                                              "?

                                                              "?
...OUP INCLUDES
... SUN
U


ALL INFORMANTS
     <1> 69%
     <2> 36%
     <3>  4%

THESE ARE THE PERCENTAGES WHICH YOU REQUESTED;
NO MAP WILL BE DRAWN.

THIS IS CALCULATION NUMBER
78-07-29-21-01
```

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
------------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤N

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤1410

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤A

DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO TYPE?
➤Y

DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO SEX?
➤Y

FOR QUESTIONNAIRE ITEM  1410:
        THESE TYPES OCCUR:
(QUAN)
  132     BUCKET
    1     BUTTER TUB
    1     CANDY BUCKET
    3     CANDY PAIL
    6     MILK BUCKET
    6     MILK PAIL
    1     OAK BUCKET
   63     PAIL
    1     SCRUB PAIL
    4     WATER BUCKET
    5     WATER PAIL
    1     WELL BUCKET
    2     WOOD BUCKET
    2     WOOD PAIL
   18     WOODEN BUCKET
    1     WOODEN CANDY PAIL
   38     WOODEN PAIL
    1     WOODEN WATER PAIL

THE PERCENTAGES CAN SHOW THE LOCATIONS OF 1, 2, 3, OR 4
  GROUPS OF RESPONSES.  (YOU MAY ALSO HAVE RESPONSES THAT
  ARE NOT INCLUDED IN ANY GROUP.)
HOW MANY GROUPS OF RESPONSES DO YOU WANT?
➤4
(IF A RESPONSE DOES NOT BELONG TO ANY GROUP, REPLY ZERO.)

WHICH GROUP INCLUDES
*BUCKET                                                    *?
➤1

WHICH GROUP INCLUDES
*BUTTER TUB                                                *?
➤0

WHICH GROUP INCLUDES
*CANDY BUCKET                                              *?
➤0

WHICH GROUP INCLUDES
*CANDY PAIL                                                *?
➤0

WHICH GROUP INCLUDES
*MILK BUCKET                                               *?
➤0

WHICH GROUP INCLUDES
*MILK PAIL                                                 *?
➤0
```

```
   WHICH GROUP INCLUDES
   "OAK BUCKET                                                    "?
➤ 0

   WHICH GROUP INCLUDES
   "PAIL                                                          "?
➤ 2

   WHICH GROUP INCLUDES
   "SCRUB PAIL                                                    "?
➤ 0

   WHICH GROUP INCLUDES
   "WATER BUCKET                                                  "?
➤ 0

   WHICH GROUP INCLUDES
   "WATER PAIL                                                    "?
➤ 0

   WHICH GROUP INCLUDES
   "WELL BUCKET                                                   "?
➤ 0

   WHICH GROUP INCLUDES
   "WOOD BUCKET                                                   "?
➤ 3

   WHICH GROUP INCLUDES
   "WOOD PAIL                                                     "?
➤ 4

   WHICH GROUP INCLUDES
   "WOODEN BUCKET                                                 "?
➤ 3

   WHICH GROUP INCLUDES
   "WOODEN CANDY PAIL                                             "?
➤ 0

   WHICH GROUP INCLUDES
   "WOODEN PAIL                                                   "?
➤ 4

   WHICH GROUP INCLUDES
   "WOODEN WATER PAIL                                             "?
➤ 0
```

TYPE I MALE	TYPE II MALE	TYPE III MALE	ALL MALE
<1> 60%	<1> 74%	<1> 40%	<1> 63%
<2> 28%	<2> 21%	<2> 50%	<2> 28%
<3> 13%	<3> 5%	<3> 20%	<3> 11%
<4> 24%	<4> 16%	<4> 20%	<4> 21%

TYPE I FEMALE	TYPE II FEMALE	TYPE III FEMALE	ALL FEMALE
<1> 58%	<1> 70%	<1> 50%	<1> 64%
<2> 42%	<2> 26%	<2> 50%	<2> 34%
<3> 8%	<3> 9%	<3> 0%	<3> 8%
<4> 25%	<4> 11%	<4> 17%	<4> 17%

TYPE I ALL	TYPE II ALL	TYPE III ALL	ALL ALL
<1> 59%	<1> 72%	<1> 44%	<1> 63%
<2> 33%	<2> 24%	<2> 50%	<2> 30%
<3> 12%	<3> 7%	<3> 13%	<3> 10%
<4> 24%	<4> 13%	<4> 19%	<4> 19%

THESE ARE THE PERCENTAGES WHICH YOU REQUESTED:
NO MAP WILL BE DRAWN.

THIS IS CALCULATION NUMBER
78-07-29-20-46

93

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
------------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➔P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➔N

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➔1410

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➔A

DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO TYPE?
➔Y

DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO SEX?
➔Y

FOR QUESTIONNAIRE ITEM  1410:
          THESE TYPES OCCUR:
(QUAN)
  132     BUCKET
    1     BUTTER TUB
    1     CANDY BUCKET
    3     CANDY PAIL
    6     MILK BUCKET
    6     MILK PAIL
    1     OAK BUCKET
   63     PAIL
    1     SCRUB PAIL
    4     WATER BUCKET
    5     WATER PAIL
    1     WELL BUCKET
    2     WOOD BUCKET
    2     WOOD PAIL
   18     WOODEN BUCKET
    1     WOODEN CANDY PAIL
   38     WOODEN PAIL
    1     WOODEN WATER PAIL

THE PERCENTAGES CAN SHOW THE LOCATIONS OF 1, 2, 3, OR 4
  GROUPS OF RESPONSES.  (YOU MAY ALSO HAVE RESPONSES THAT
  ARE NOT INCLUDED IN ANY GROUP.)
HOW MANY GROUPS OF RESPONSES DO YOU WANT?
➔3
(IF A RESPONSE DOES NOT BELONG TO ANY GROUP, REPLY ZERO.)

WHICH GROUP INCLUDES
"BUCKET                                                    "?
➔1

WHICH GROUP INCLUDES
"BUTTER TUB                                                "?
➔3

WHICH GROUP INCLUDES
"CANDY BUCKET                                              "?
➔3

WHICH GROUP INCLUDES
"CANDY PAIL                                                "?
➔3

WHICH GROUP INCLUDES
"MILK BUCKET                                               "?
➔3

WHICH GROUP INCLUDES
"MILK PAIL                                                 "?
➔3
```

```
   WHICH GROUP INCLUDES
   *OAK BUCKET                                                    *?
➤ 2

   WHICH GROUP INCLUDES
   *PAIL                                                          *?
➤ 1

   WHICH GROUP INCLUDES
   *SCRUB PAIL                                                    *?
➤ 3

   WHICH GROUP INCLUDES
   *WATER BUCKET                                                  *?
➤ 3

   WHICH GROUP INCLUDES
   *WATER PAIL                                                    *?
➤ 3

   WHICH GROUP INCLUDES
   *WELL BUCKET                                                   *?
➤ 3

   WHICH GROUP INCLUDES
   *WOOD BUCKET                                                   *?
➤ 2

   WHICH GROUP INCLUDES
   *WOOD PAIL                                                     *?
➤ 2

   WHICH GROUP INCLUDES
   *WOODEN BUCKET                                                 *?
➤ 2

   WHICH GROUP INCLUDES
   *WOODEN CANDY PAIL                                             *?
➤ 0

   WHICH GROUP INCLUDES
   *WOODEN PAIL                                                   *?
➤ 2

   WHICH GROUP INCLUDES
   *WOODEN WATER PAIL                                             *?
➤ 0
```

TYPE I MALE	TYPE II MALE	TYPE III MALE	ALL MALE
<1> 88%	<1> 95%	<1> 90%	<1> 91%
<2> 37%	<2> 23%	<2> 40%	<2> 33%
<3> 18%	<3> 14%	<3> 30%	<3> 18%

TYPE I FEMALE	TYPE II FEMALE	TYPE III FEMALE	ALL FEMALE
<1>100%	<1> 96%	<1>100%	<1> 98%
<2> 33%	<2> 20%	<2> 17%	<2> 25%
<3> 3%	<3> 13%	<3> 0%	<3> 8%

TYPE I ALL	TYPE II ALL	TYPE III ALL	ALL ALL
<1> 92%	<1> 96%	<1> 94%	<1> 94%
<2> 36%	<2> 21%	<2> 31%	<2> 29%
<3> 13%	<3> 13%	<3> 19%	<3> 13%

THESE ARE THE PERCENTAGES WHICH YOU REQUESTED;
NO MAP WILL BE DRAWN.

THIS IS CALCULATION NUMBER
78-07-29-21-44

```
THIS PROGRAM WILL DRAW A MAP OF DIALECTS IN
THE UPPER MIDWEST.
------------------------------------------

DO YOU WANT TO DRAW ISOGLOSSES (I), A SCATTERGRAM (S),
  PARTICIPATION ZONES (Z), PERCENTAGES (P), OR
  AN ISOGLOSS/SCATTERGRAM COMBINATION (C)?
➤P

DO YOU WANT TO DRAW A MAP SHOWING THE INFORMANTS' LOCATIONS?
➤N

WHICH QUESTIONNAIRE ITEM DO YOU WANT?
➤1410

DO YOU WANT TO ACCEPT (A) OR REJECT (R) ANNOTATED RESPONSES?
➤A

DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO TYPE?
➤Y

DO YOU WANT TO SEPARATE THE INFORMANTS ACCORDING TO SEX?
➤Y

FOR QUESTIONNAIRE ITEM  1410:
          THESE TYPES OCCUR:
(QUAN)
  132     BUCKET
    1     BUTTER TUB
    1     CANDY BUCKET
    3     CANDY PAIL
    6     MILK BUCKET
    6     MILK PAIL
    1     OAK BUCKET
   63     PAIL
    1     SCRUB PAIL
    4     WATER BUCKET
    5     WATER PAIL
    1     WELL BUCKET
    2     WOOD BUCKET
    2     WOOD PAIL
   18     WOODEN BUCKET
    1     WOODEN CANDY PAIL
   38     WOODEN PAIL
    1     WOODEN WATER PAIL

THE PERCENTAGES CAN SHOW THE LOCATIONS OF 1, 2, 3, OR 4
  GROUPS OF RESPONSES.  (YOU MAY ALSO HAVE RESPONSES THAT
  ARE NOT INCLUDED IN ANY GROUP.)
HOW MANY GROUPS OF RESPONSES DO YOU WANT?
➤3
(IF A RESPONSE DOES NOT BELONG TO ANY GROUP, REPLY ZERO.)

WHICH GROUP INCLUDES
"BUCKET                                                    "?
➤1

WHICH GROUP INCLUDES
"BUTTER TUB                                                "?
➤0

WHICH GROUP INCLUDES
"CANDY BUCKET                                              "?
➤0

WHICH GROUP INCLUDES
"CANDY PAIL                                                "?
➤0

WHICH GROUP INCLUDES
"MILK BUCKET                                               "?
➤0

WHICH GROUP INCLUDES
"MILK PAIL                                                 "?
➤0
```

```
   WHICH GROUP INCLUDES
   *OAK BUCKET                                                    *?
➤ 2

   WHICH GROUP INCLUDES
   *PAIL                                                          *?
➤ 3

   WHICH GROUP INCLUDES
   *SCRUB PAIL                                                    *?
➤ 0

   WHICH GROUP INCLUDES
   *WATER BUCKET                                                  *?
➤ 0

   WHICH GROUP INCLUDES
   *WATER PAIL                                                    *?
➤ 0

   WHICH GROUP INCLUDES
   *WELL BUCKET                                                   *?
➤ 0

   WHICH GROUP INCLUDES
   *WOOD BUCKET                                                   *?
➤ 2

   WHICH GROUP INCLUDES
   *WOOD PAIL                                                     *?
➤ 2

   WHICH GROUP INCLUDES
   *WOODEN BUCKET                                                 *?
➤ 2

   WHICH GROUP INCLUDES
   *WOODEN CANDY PAIL                                             *?
➤ 2

   WHICH GROUP INCLUDES
   *WOODEN PAIL                                                   *?
➤ 2

   WHICH GROUP INCLUDES
   *WOODEN WATER PAIL                                             *?
➤ 2
```

TYPE I MALE	TYPE II MALE	TYPE III MALE	ALL MALE
<1> 60%	<1> 74%	<1> 40%	<1> 63%
<2> 39%	<2> 23%	<2> 40%	<2> 33%
<3> 28%	<3> 21%	<3> 50%	<3> 28%
TYPE I FEMALE	**TYPE II FEMALE**	**TYPE III FEMALE**	**ALL FEMALE**
<1> 58%	<1> 70%	<1> 50%	<1> 64%
<2> 33%	<2> 22%	<2> 17%	<2> 26%
<3> 42%	<3> 26%	<3> 50%	<3> 34%
TYPE I ALL	**TYPE II ALL**	**TYPE III ALL**	**ALL ALL**
<1> 59%	<1> 72%	<1> 44%	<1> 63%
<2> 37%	<2> 22%	<2> 31%	<2> 30%
<3> 33%	<3> 24%	<3> 50%	<3> 30%

```
THESE ARE THE PERCENTAGES WHICH YOU REQUESTED;
NO MAP WILL BE DRAWN.

THIS IS CALCULATION NUMBER
78-07-29-22-41
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